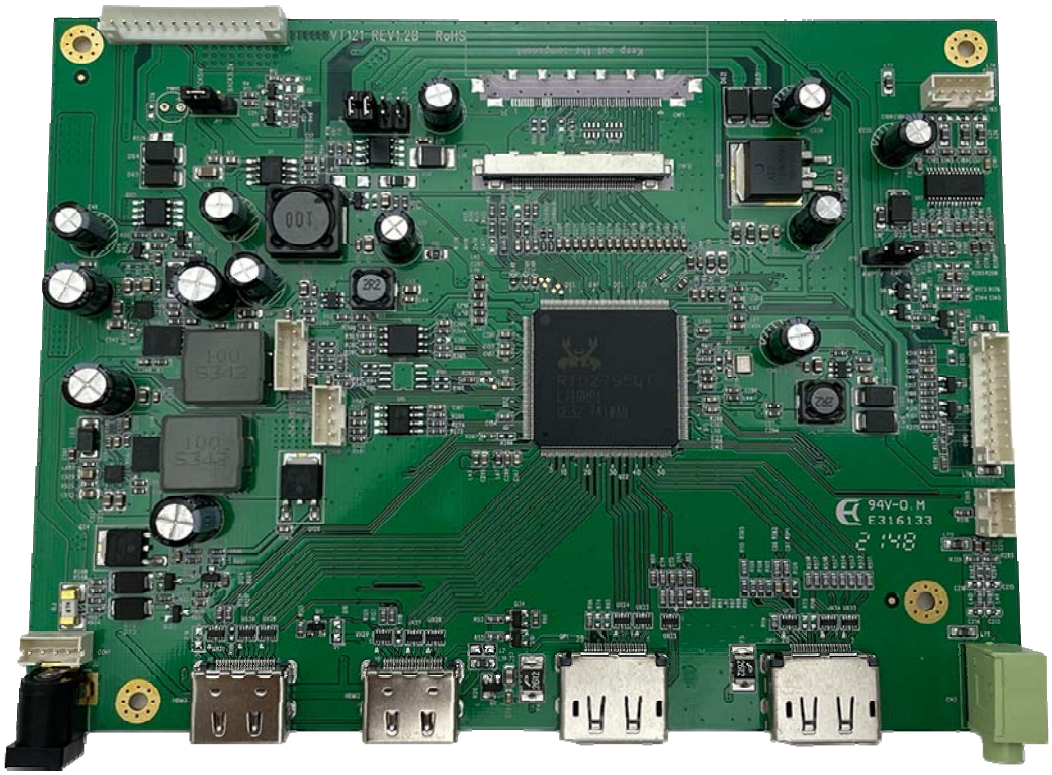
VT121



A/D board option

Mode	Teleview part no.	Description
1	C121A795A01--	2 HDMI+ 2 DP, Audio, V-by-one
2	C121A795A21--	2 HDMI+ 2 DP, Audio, eDP
3	C121P795A01--	2 HDMI+ 2 DP, Audio, V-by-one,W/power board

Features

- **The A/D Board is designed to connected with 4K x 2K TFT LCD panel, using the main chip manufactured by Realtek , including Color Engine and Audio DAC which can output high quality picture and sound quality.**
- **It supports 8 pairs V-by-one and eDP interface for 4Kx2K Panel.**
- **The A/D Board Offers HDMI and DisplayPort to support input signal up to 4Kx2K 60Hz.**
- **Support Picture Rotate function.**
- **Built in10Wx2 audio amp.(Optional)**
- **In HDMI mode , the board supports color depth of 6-Bit , 8-bit , 10 bit and 12-bit.**
- **In DisplayPort mode , three link layer speed HBR2(5.4GHz) , HBR(2.7GHz) , RBR(1.6GHz) are supported.**
- **Wide input voltage range 12V ~ 24V**
- **Operating temperature range: 0℃ to +50℃**
- **Storage temperature range: -40℃ to +60℃**
- **Operating humidity range : 0% to 80% (Non-condensing)**
- **Storage humidity range : 0% to 80% (Non-condensing)**
- **RoHS compliant.**

Component Information

I/O	Input	DisplayPort 1.2	Display Port Connector × 1
		DisplayPort 1.2	Display Port Connector × 1
		HDMI 2.0	Type A 19Pin × 1
		HDMI 2.0	Type A 19Pin × 1
		Key Pad	5Key Tact Switch w/LED
		Power	DC Jack2.5
		Audio	3.5mm Audio Phone Jack
	Output	Panel Interface	41Pin / 0.5mm eDP Connector × 1
		Panel Interface	51Pin / 0.5mm V-by-1 Connector × 1
		Audio Speaker	Wafer 4Pin 2.0mm (R/L × 1)
Power	Input Power		DC + 12V / +24V
	Panel Power		DC +3.3V / +5V / +12V
	Operate Mode		Normal / Stand By
	Power Consumption		Normal Mode < 15W Stand By Mode<TBD
Others	Audio AMP		2 x 10W@8ohm 1Vrms THD:10%
	OSD Control		Power, Menu, Exit, Up, Down
	OSD Language		English (Added by Request)

Timing Table

- **The following table includes all display modes that this AD board can support; The product does not ensure proper operation if the display mode is not in the table**

- **The table has covered most of popular display modes, especially VESA standard definition display modes. It is possible to add special display mode into the table if customer offers the timing information and verified successfully by us .**

- **Not every application can apply to all modes in the table . It depends on panel , resolution and some key parameters.**

- **Most panels does not support 75Hz vertical refresh rate while the A/D board can support . Improper application out of panel limit range may cause the damage to panel.**

- **The best display performance can be shown only when the input display mode matches the panel resolution.**

Video Mode			f H (kHz)	fV (Hz)	Dot clock (MHz)	HDMI 1.4	HDMI 2.0	DisplayPort 1.2
VESA	640x400		37.9	85	31.5	-	-	-
	VGA 640x480		31.469	59.94	25.175	O	O	O
			37.861	72.809	31.5	O	O	O
			37.5	75	31.5	O	O	O
	720x400		31.47	70.08	28.3	O	O	O
	SVGA 800x600		35.156	56.25	36	O	O	O
			37.879	60.317	40	O	O	O
			48.077	72.188	50	O	O	O
			46.875	75	49.5	O	O	O
	XGA 1024x768		48.363	60.004	65	O	O	O
			56.476	70.069	75	O	O	O
			60.023	75.029	78.75	O	O	O
	1280x720		44.8	60	74.500	O	O	O
	1280x768		47.776	59.87	79.5	O	O	O
	SXGA	1152x864	67.5	75	108	-	-	-
		1280x1024	63.981	60.02	108	O	O	O
			79.976	75.025	135	O	O	O
	WXGA 1360x768		47.712	60.015	85.5	-	-	-
	1366x768		47.7	60	85.5	O	O	O
	1400x1050		64.7	60	101	-	-	-
			82.3	75	150	-	-	-
	1440x900		55.935	59.88	106.5	-	-	-
			70.6	75	136.75	-	-	-
	WSXGA+ 1680x1050		65.29	59.954	146.25	O	O	O
	1920x1080		67.6	60	148.5	O	O	O
	2560x1600		98.713	59.972	268.5	O	O	O
	3840x2160		133.313	59.997	533.25	-	O	O

Connector Definition Description

J2 (DC Jack/2.5mm)+12V/+24V dc Input Interface

NO.	Definition	Description
1	+12V/+24V	+12V-+24V dc Power Input
2,3	GND	Ground

CN2 (phone jack/3.5mm)Audio Line-in connector Interface

NO.	Definition	Description
1,3,5	GND	Ground
2	Left	Left channel
4	Right	Right channel

CON1 (2.0 mm 4Pin DIP)+12V/+24V dc Input Interface

NO.	Definition	Description
1,2	+12V/+24V	+12V-+24V dc Power Input
3,4	GND	Ground

JP7 (2.0 mm 14Pin DIP)

NO.	Definition	Description
1,2,3,4	+12V	+12V dc Power Input
5,6,7,8	GND	Ground
9	BKL ADJ	Invertor Adjustable(Dimming)
10	BKL On/Off	Invertor On/Off Control
11,12	+5V	+5V dc Power Output
13	+5V STB	+5V dc Power Input
14	PS-ON	Power Module Control

CON3 (2.0 mm 10 Pin DIP) KEY PAD

NO.	Definition	Description
1	SEL+ / Right	UP / Right Key
2	SEL- / Left	DOWN / Left Key
3	SOURCE/Exit	INPUTSOURCE & EXIT
4	MENU/ENTER	OSD MENU / ENTER
5	POWER	POWER KEY
6	LED-G	LED Green
7	LED-R	LED Orange
8	GND	Ground
9	NC	NC
10	NC	NC

CON4 (2.0 mm 4Pin DIP) 10Wx2 Audio_AMP_Output

NO.	Definition	Description
1	AMP_Rout N	Right Channel Output
2	AMP_Rout P	Right Channel Output
3	AMP_Lout N	Left Channel Output
4	AMP_Lout P	Left Channel Output

CON5 (2.0 mm 3Pin DIP) IR

NO.	Definition	Description
1	+5V	+5V dc Power Input
2	IR	IR signal receive
3	GND	Ground

CON6 (2.0 mm 4Pin DIP) UART Connector

NO.	Definition	Description
1	+5V	VDC
2	Tx	UART TX
3	Rx	UART RX
4	GND	Ground

CON7 (2.0 mm 5Pin DIP) I2C Connector

NO.	Definition	Description
1	+5V	VDC
2	ABL	ADC GPIO Pin
3	SDA	I2C SDA
4	SCL	I2C SCL
5	GND	Ground

JP1 (2.54mm 8Pin DIP) Panel Power Selection

NO.	Definition	Description
1-8	+3.3V	+3.3V For Panel Power
2-7	+5V	+5V For Panel Power
3-6 ,4-5	+12V	+12V For Panel Power

JP2 (2.54mm 3Pin DIP) Backlight ON/OFF & Adjust Pull High Selection

NO.	Definition	Description
1-2	+3.3V	+3.3V For Pull High
2-3	+5V	+5V For Pull High

JP10 (2.54mm 3Pin DIP) Audio AMP Selection

NO.	Definition	Description
1-2	+5V	+5V For Audio AMP Power
2-3	+12V	+12V For Audio AMP Power

CNF1（0.5 mm 51Pin SMD）V By One Signal Interface

NO.	Definition	Description
1	GND	Ground
2	Lane 7 -	V By One 8th Pixel Negative
3	Lane 7 +	V By One 8th Pixel Positive
4	GND	Ground
5	Lane 6 -	V By One 7th Pixel Negative
6	Lane 6 +	V By One 7th Pixel Positive
7	GND	Ground
8	Lane 5 -	V By One 6th Pixel Negative
9	Lane 5 +	V By One 6th Pixel Positive
10	GND	Ground
11	Lane 4 -	V By One 5th Pixel Negative
12	Lane 4 +	V By One 5th Pixel Positive
13	GND	Ground
14	Lane 3 -	V By One 4th Pixel Negative
15	Lane 3 +	V By One 4th Pixel Positive
16	GND	Ground
17	Lane 2 -	V By One 3th Pixel Negative
18	Lane 2 +	V By One 3th Pixel Positive
19	GND	Ground
20	Lane 1 -	V By One 2th Pixel Negative
21	Lane 1 +	V By One 2th Pixel Positive
22	GND	Ground
23	Lane 0 -	V By One 1th Pixel Negative
24	Lane 0 +	V By One 1th Pixel Positive
25	GND	Ground
26	Lock_En	Lock detect output

27	HTP_DN	Hot plug detect output
28	8b_10b	Select 8bit or 10bit
29	NC	NC
30	NC	NC
31	NC	NC
32	NC	NC
33	SCL	I2C SCL Signal(Reserve)
34	SDA	I2CSDASignal(Reserve)
35	NC	NC
36	NC	NC
37	3.3V_GND	Select Local Dimming ON/OFF
38	GND	Ground
39	GND	Ground
40	GND	Ground
41	GND	Ground
42	NC	NC
43	NC	NC
44	V Panel	Power for Panel
45	V Panel	Power for Panel
46	V Panel	Power for Panel
47	V Panel	Power for Panel
48	V Panel	Power for Panel
49	V Panel	Power for Panel
50	V Panel	Power for Panel
51	V Panel	Power for Panel

CNF2（0.5 mm 41Pin SMD）8LAN eDP Signal Interface

NO.	Definition	Description
1	2nd Lane3_N	Negative eDP differential data input
2	2nd Lane3_P	Positive eDP differential data input
3	GND	Ground
4	2nd Lane2_N	Negative eDP differential data input
5	2nd Lane2_P	Positive eDP differential data input
6	GND	Ground
7	2nd Lane1_N	Negative eDP differential data input
8	2nd Lane1_P	Positive eDP differential data input
9	GND	Ground
10	2nd Lane0_N	Negative eDP differential data input
11	2nd Lane0_P	Positive eDP differential data input
12	GND	Ground
13	2nd AUX_CH_P	Positive AUX Channel differential data input
14	2nd AUX_CH_N	Negative AUX Channel differential data input
15	2nd HPD	Hot plug detection
16	1st Lane3_N	Negative eDP differential data input
17	1st Lane3_P	Positive eDP differential data input
18	GND	Ground
19	1st Lane2_N	Negative eDP differential data input
20	1st Lane2_P	Positive eDP differential data input

21	GND	Ground
22	1st Lane1_N	Negative eDP differential data input
23	1st Lane1_P	Positive eDP differential data input
24	GND	Ground
25	1st Lane0_N	Negative eDP differential data input
26	1st Lane0_P	Positive eDP differential data input
27	GND	Ground
28	1st AUX_CH_P	Positive AUX Channel differential data input
29	1st AUX_CH_N	Negative AUX Channel differential data input
30	1st HPD	Hot plug detection
31	NC	NC
32	NC	NC
33	NC	NC
34	NC	NC
35	GND	Ground
36	GND	Ground
37	GND	Ground
38	NC	NC
39	V Panel	Power for Panel
40	V Panel	Power for Panel
41	V Panel	Power for Panel

Board Dimension :160mm*124mm

Screw holes*4:3.0mm