



AIO AD Board for TD series (PN: 9PB0044) Product Specifications

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Note: This Specification is subject to change without notice.			

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Record of Revision

Version	Date	Page	Description
1.0	2024/8/1	All	First Edition
1.1	2024/8/15	3, 4	Update audio port

1. General Description

This is TFT LCD AD board (Model NO. 9PB0044) that conform with SGS RoHS standard.

The 9PB0044 AD Board is a highly-integrated for digital panel solution, top quality computer graphic images on LCD monitor/flat panel displays, such as Full HD LCD monitors. LCD monitors and flat panel displays provide a sharp, flicker free display while saving space and energy for desktop PC applications.

2. Features

Items	Specifications
Input Signal	VGA HDMI DP STEREO AUDIO (PC AUDIO)
Support Mode	VGA,SVGA,XGA,SXGA,UXGA,HD,Full HD
Color Depth	24 bit
Hsync Range	30~80KHz
Vsync Range	60~75Hz
Output Signal	18/24 bits dual channels LVDS
Audio Output	2.8W+2.8W @ 4Ω Class-D stereo audio amplifier
Keypad	POWER , ADJ+ , ADJ- , MENU , AUTO
OSD Menu	Brightness, Contrast, Gamma, Phase, Clock, H/V Position, Reset, Color
Power Input	DC 12~24V +/- 10%
Power Mode	Power ON, Power Saving, Power OFF
Power Consumption	3.0W (NO Loading)
Dimension(L x W x H)	135 x 85 x 20 (mm)
Plug and Play	Support
Standby Power Consumption	Standby < 3W

3. Connector Description

Indicate	Function	Note
CN1	12V_OUT Connector	PH:2.0mm 2-Pin
CN2	AUDIO SPEAKER OUTPUT	PH:2.0mm 4-Pin
CN3	AUDIO INPUT	PH:2.0mm 3-Pin
CN4	BACKLIGHT I/F CONNECTOR	PH:2.0mm, 6-Pin
CN5	OSD KEYPAD CONNECTOR	PH:2.0mm, 9-Pin
CN6	POWER INPUT 12~24V	PH:2.0mm, 4-Pin
CN7	USB2.0 BYPASS OUTPUT	PH:2.0mm, 4-pin
CN8/DC1	POWER INPUT 12~24V	PXC 3-Pin Connector
USB1	USB2.0 BYPASS INPUT	USB Type B Connector
HDMI1	HDMI INPUT	Standard HDMI A/F Jack
DP1	DP INPUT	Standard DP/F Jack
VGA1	VGA INPUT	PH:2.0mm, 15-Pin
J1	PANEL OUTPUT	PH:2.0mm 30-Pin

CN1 : 12V_OUT Connector (PH : 2-pin wafer / pitch 2.0mm / straight angle)

Indicate	Define	Description
1	VCC	VCC +12V
2	GND-	Ground

CN2 : AUDIO SPEAKER OUTPUT (PH : 4-pin wafer / pitch 2.0mm / straight angle)

Indicate	Define	Description
1	Speaker R+	R_OUT + Audio Right + Output
2	Speaker R-	R_OUT - Audio Right - Output
3	Speaker L-	L_OUT - Audio LEFT - Output
4	Speaker L+	L_OUT + Audio LEFT + Output

CN3 : Audio input Connector (PH : 3-pin wafer / pitch 2.0mm / straight angle)

Indicate	Define	Description
1	Audio_L	Audio_L
2	Audio_GND	Audio_GND
3	Audio_R	Audio_R

CN4 : BACKLIGHT I/F (PH : 6-pin wafer / pitch 2.0mm / straight angle)

Indicate	Define	Description
1	GND	Ground
2	GND	Ground
3	BK_PWM	Brightness Adjust
4	BK_ON/OFF	ON/OFF (Hi Active)
5	VCC	DC +12 Power Supply
6	VCC	DC +12 Power Supply

CN5 : OSD KEYPAD (PH : 9-pin wafer / pitch 2.0mm / straight angle)

Indicate	Define	Description
1	NC	NC
2	AUTO KEY	AUTO
3	ADJ + KEY	ADJ+ KEY
4	ADJ – KEY	ADJ- KEY
5	MENU KEY	MENU KEY
6	GND	Ground
7	LED_G	Green LED
8	LED_O	Red LED
9	POWER KEY	POWER KEY

CN6 : POWER INPUT (PH : 4-pin wafer / pitch 2.0mm / straight angle)

Indicate	Define	Description
1,2	DC+ IN	DC 12V~24V+/-10% Power Supply
3,4	DC GND	Ground

CN7 : USB2.0 BYPASS OUTPUT (PH : 4-pin wafer / pitch 2.0 / straight angle)

Indicate	Define	Description
1	VBUS	VBUS
2	DATA -	DATA -
3	DATA +	DATA +
4	GND	GND

CN8/DC1 : POWER INPUT (PXC 3pin terminal block OQ flange series / pitch 5.0mm / right angle)

Indicate	Define	Description
1	DC+ IN	DC 12V~24V+/-10% Power Supply
2	DC GND	Ground
3	CHASSIS GND	Chassis Ground

USB1 : USB2.0 BYPASS INPUT (PH : Standard USB type B connector / right angle)

Indicate	Define	Description
1	VBUS	VBUS
2	DATA -	DATA -
3	DATA +	DATA +
4	GND	GND

HDMI1 : HDMI INPUT PORT (PH : Standard HDMI A /Female jack / right angle)

Indicate	Define	Indicate	Define
1	TMDS Data2+	11	TMDS Clock Shield
2	TMDS Data2 Shield	12	TMDS Clock-
3	TMDS Data2-	13	N/C
4	TMDS Data1+	14	N/C
5	TMDS Data1 Shield	15	DDC SCL
6	TMDS Data1-	16	DDC SDA
7	TMDS Data0+	17	DDC/CEC Ground
8	TMDS Data0 Shield	18	+5V Power
9	TMDS Data0-	19	Hot Plug Detect
10	TMDS Clock+		

DP1 : DisplayPort Input (PH : Standard DP /Female jack / right angle)

Indicate	Define	Indicate	Define
1	ML Lane0+	11	GND
2	GND	12	ML Lane3-
3	ML Lane0-	13	GND
4	ML Lane1+	14	GND
5	GND	15	AUX CH+
6	ML Lane1-	16	GND
7	ML Lane2+	17	AUX CH-
8	GND	18	+5V Power
9	ML Lane2-	19	Hot Plug
10	ML Lane3+	20	DP PWR

VGA1 : INPUT PORT (PH : Standard D-sub 15-Pin jack / right angle)

Indicate	Define	Indicate	Define
1	RED IN	9	+5 VCC
2	GREEN IN	10	GND
3	BLUE IN	11	GND
4	GND	12	DDC SDA
5	GND	13	SYNC H
6	GND	14	SYNC V
7	GND	15	DDC SCL
8	GND		

J1 : PANEL OUTPUT (PH : 2.0mm, 15 Pin x2 header, straight angle)

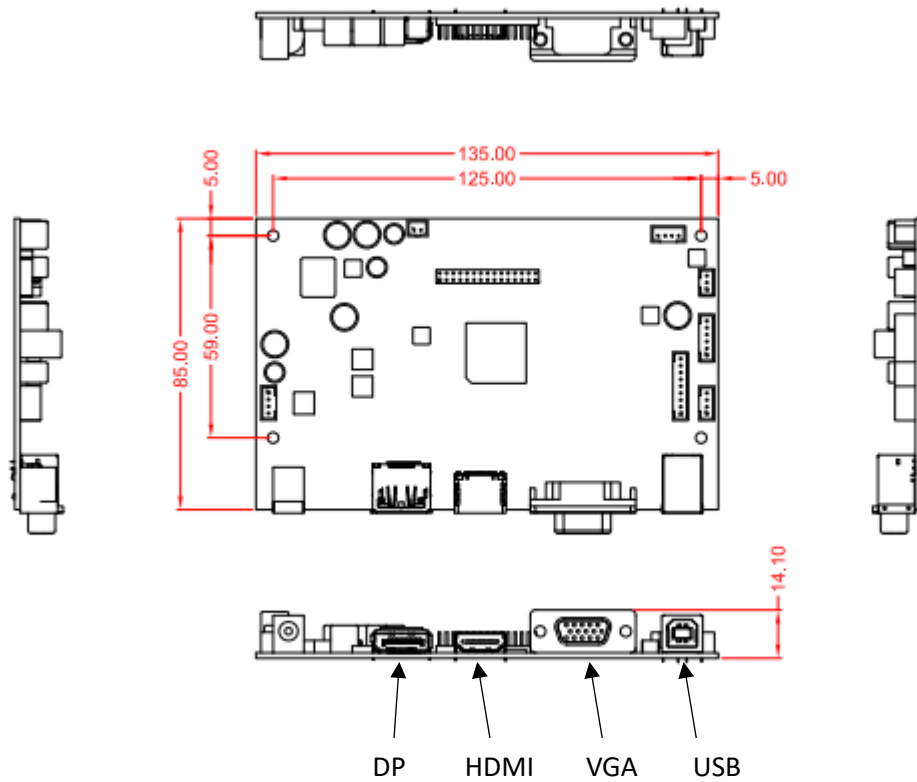
Pin no	Define	Type	Description
1	LCD-VCC	Power	Power for Panel (+3.3V)
2	LCD-VCC	Power	
3	LCD-VCC	Power	
4	GND	Ground	Ground
5	GND	Ground	
6	GND	Ground	
7	LVDS RXE_0-	-	LVDS ODD 0 - Signal
8	LVDS RXE_0+	-	LVDS ODD 0 + Signal
9	LVDS RXE_1-	-	LVDS ODD 1 - Signal
10	LVDS RXE_1+	-	LVDS ODD 1 + Signal
11	LVDS RXE_2-	-	LVDS ODD 2 - Signal
12	LVDS RXE_2+	-	LVDS ODD 2 + Signal
13	GND	Ground	Ground
14	GND	Ground	
15	LVDS RXE_CLK-	-	LVDS ODD Clock - Signal
16	LVDS RXE_CLK +	-	LVDS ODD Clock + Signal
17	LVDS RXE_3-	-	LVDS ODD 3 - Signal
18	LVDS RXE_3+	-	LVDS ODD 3 + Signal
19	LVDS RXO_0-	-	LVDS EVEN 0 - Signal
20	LVDS RXO_0+	-	LVDS EVEN 0 + Signal
21	LVDS RXO_1-	-	LVDS EVEN 1 - Signal
22	LVDS RXO_1+	-	LVDS EVEN 1 + Signal
23	LVDS RXO_2-	-	LVDS EVEN 2 - Signal
24	LVDS RXO_2+	-	LVDS EVEN 2 + Signal
25	GND	Ground	Ground
26	GND	Ground	
27	LVDS RXO_CLK -	-	LVDS EVEN Clock - Signal
28	LVDS RXO_CLK +	-	LVDS EVEN Clock + Signal
29	LVDS RXO_3-	-	LVDS EVEN 3 - Signal
30	LVDS RXO_3+	-	LVDS EVEN 3 + Signal

4. Transportation, Storage, Requirement

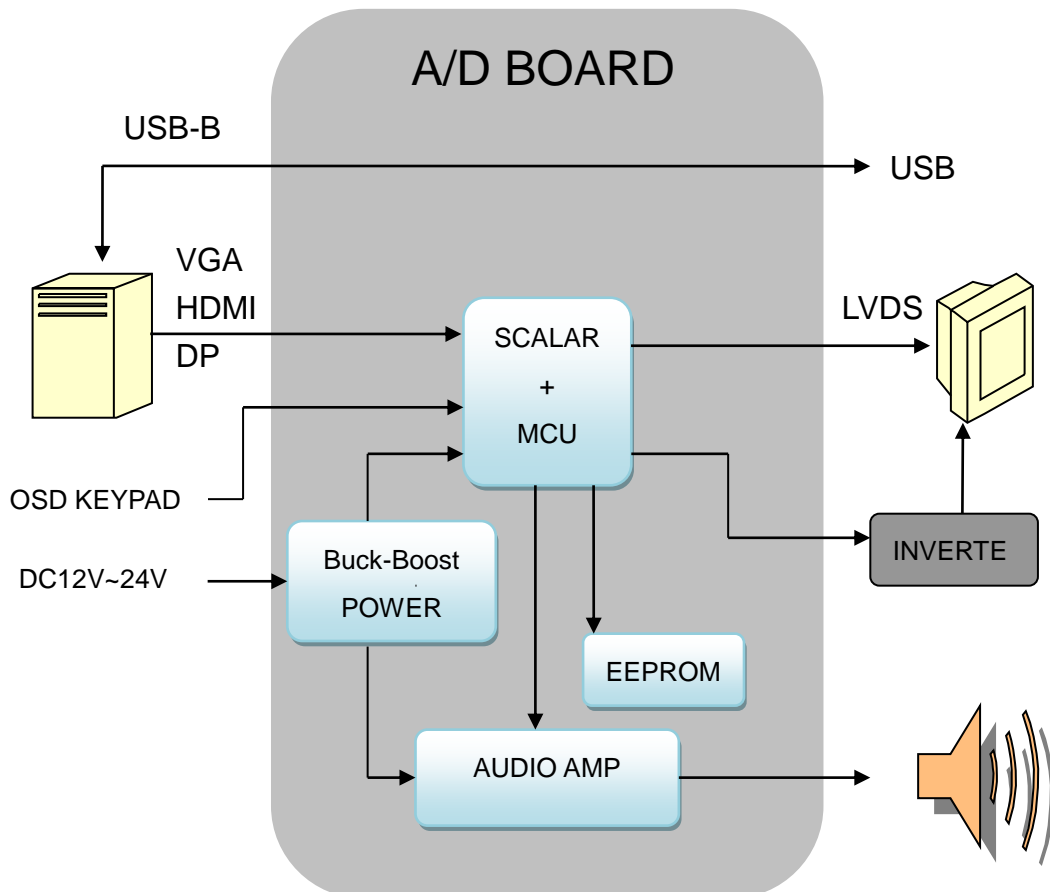
1. Heavy pressure prevented
2. Electronics discharge protection
3. Humidity max: 80%
4. Storage Temperature: -40 ~ +80 °C
5. Operating Temperature: -20 ~ +70 °C

5. OD Dimension

L: 135mm x W: 85mm x H: 20mm



6. Function Block

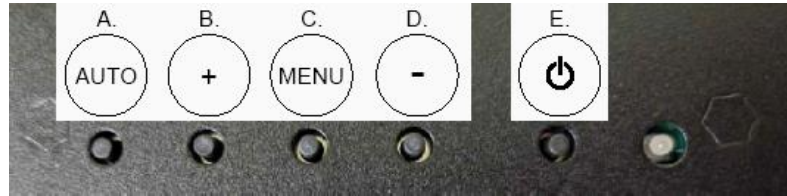


7. OSD (optional)

OSD cable: 94-61167-000

OSD board: 94-63012-000

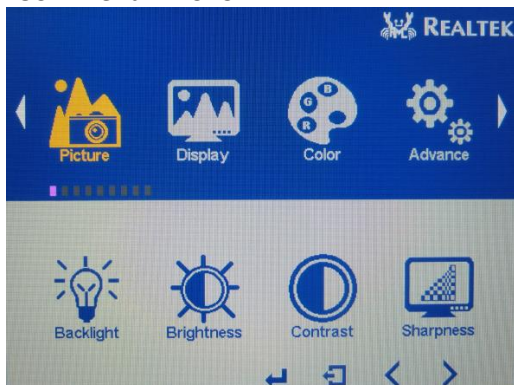
Key Pad Keys Defined: Total 5 keys



A.	AUTO: Return to previous menu(OSD Menu)
B.	UP / RIGHT (+): Increase setting or scroll up the menu bar
C.	MENU: Activate OSD Menu
D.	DOWN / LEFT (-): Decrease setting or scroll down the menu bar
E.	POWER: Turn on or off the Display

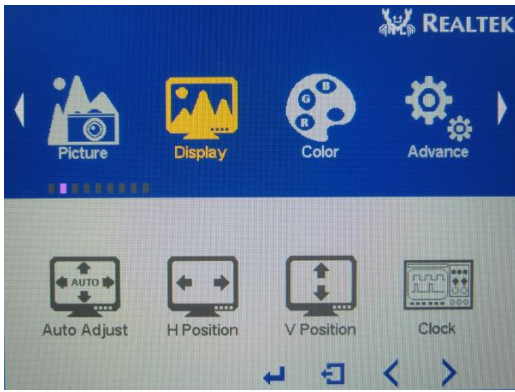
Note: Dual color LED indicator: when there is an input signal, the indicator will be green. If input is not connected or there is no signal, the indicator will be orange.

-OSD Menu –PICTURE



Item	Label	Range
1	Backlight	0~100
2	Brightness	0~100
3	Contrast	0~100
4	Sharpness	0~4

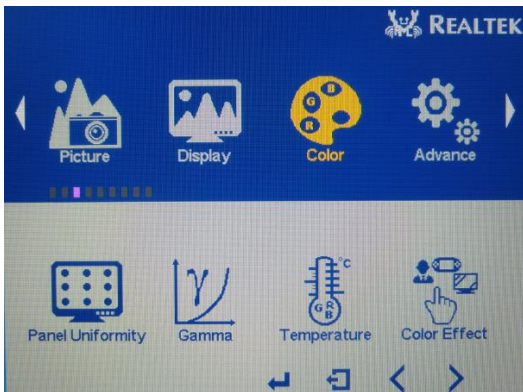
-OSD Menu –DISPLAY



Item	Label	Range
1	*Audo Adjust	Perform
2	*H position	0~100
3	*V position	0~100
4	*Clock	0~100
5	* Phase	0~100
6	Disp Rotate	0
7	*Disp Latency	N/A
8	*Freeze	N/A

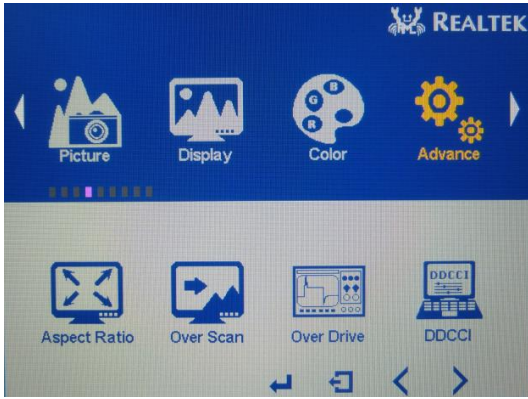
*VGA Mode Only

-OSD Menu –COLOR



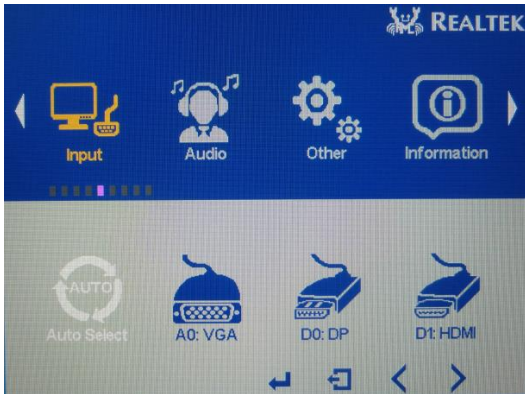
Item	Label	Range
1	Panel Uniformity	ON/OFF
2	Gamma	OFF /1.8/2.0/2.2/2.4
3	Temperature	9300/7500/6500/5800/ sRGB/User
4	Color Effect	Standard/Game/Movie /Photo/Vivid/User
5	Demo	OFF/Type1/Type2/ Type3/Type4/Type5
6	*Color Format	RGB/YUV
7	PCM	sRGB / Adobe / User / Native
8	Hue	0~100
9	Saturation	0~100

-OSD Menu –ADVANCE



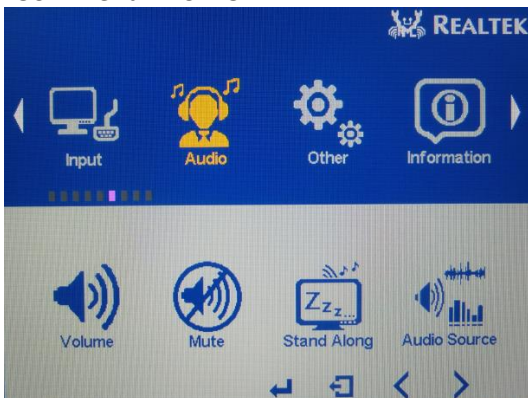
Item	Label	Range
1	Aspect Rate	Full/16:9/4:3/5:4/1:1/User
2	Over scan	ON/OFF
3	Over Drive	ON/OFF
		ODGain0~100
4	DDCCI	ON/OFF
5	Ultra Vivid	OFF/L/M/H
6	DP Option	D0/D1/D2/D6
7	DP Resolution	1080P / 2560x1440 /4K 2K@60Hz
8	Clone Mode	ON/OFF

-OSD Menu –INPUT



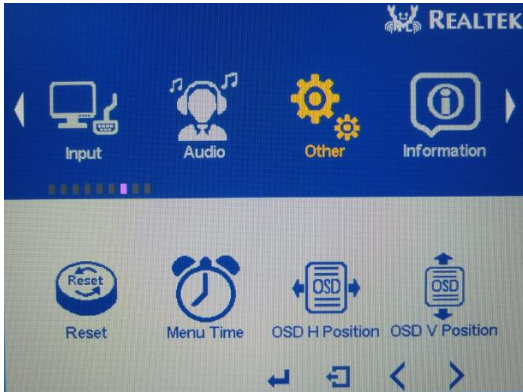
Item	Label	Range
1	Auto Select	Perform
2	A0:VGA	Perform
3	D0:DP	Perform
4	D1:HDMI	Perform
5	None2~6	N/A

-OSD Menu –AUDIO



Item	Label	Range
1	Volum	0~100
2	Mute	ON/OFF
3	Stand Along	ON/OFF
4	Audo Source	Analog/Digital
5	Sound Mode	N/A

-OSD Menu –OTHER



Item	Label	Range
1	Reset	Perform
2	Menu Time	0~60
3	OSD H Position	0~100
4	OSD V Position	0~100
5	Language	English/中文
6	OSDTransparency	0~255
7	OSD Rotate	0/90/270/180

-OSD Menu –INFORMATION

