SPECIFICATION

Model Covered:
AML-06409

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Allinx media

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1. FEATURES

1.1 State of the art high performance picture quality and low cost design

1.2 Analog RGB / Audio input / Speaker out (Default : Analog RGB only)

1.3 Multi-sync capability up to VGA resolution @ 75Hz

1.4 Compatible standard DOS, VGA VESA timing

1.5 Data processing and display driving

1.6 Single control operated & transparent On-Screen-Display (OSD) user interface

1.7 Multi language support(OSD Menu)

1.8 Compatible with VESA DPMS power saving modes

1.9 VESA DDC1/2B compliant

1.10 +12VDC power: AC/DC power adapter recommended

1.11 Form factor: 100mm (L) x 110mm (W) x 15mm(H).

1.12 Operating temperature: 0 to 50°C

1.13 OSD & Power switch board

1.14 Optional Audio (2W X 2),Stereo input & output, Headphone output

2. GENERAL DESCRIPTION

AML-06409LVT is an advanced LCD Touch Monitor. This design enables a full conventional CRT monitor replacement with Active Matrix LCD module.
It is suitable for video resolution up to VGA @ 75Hz in various video modes, the full display area of the module is used. The design is implemented as a single printed circuit board.

As the AML-06409LVT is designed to act as a full monitor interface.
The main functionality of an analog, also various appealing On-Screen-Display Menu.
Layouts are possible on customer's request.

The AML-06409LVT is designed to support various TFT LCDs under VGA resolution by BIOS option, customers line-up their monitors with their own identity with following options.

3. BLOCK DIAGRAM

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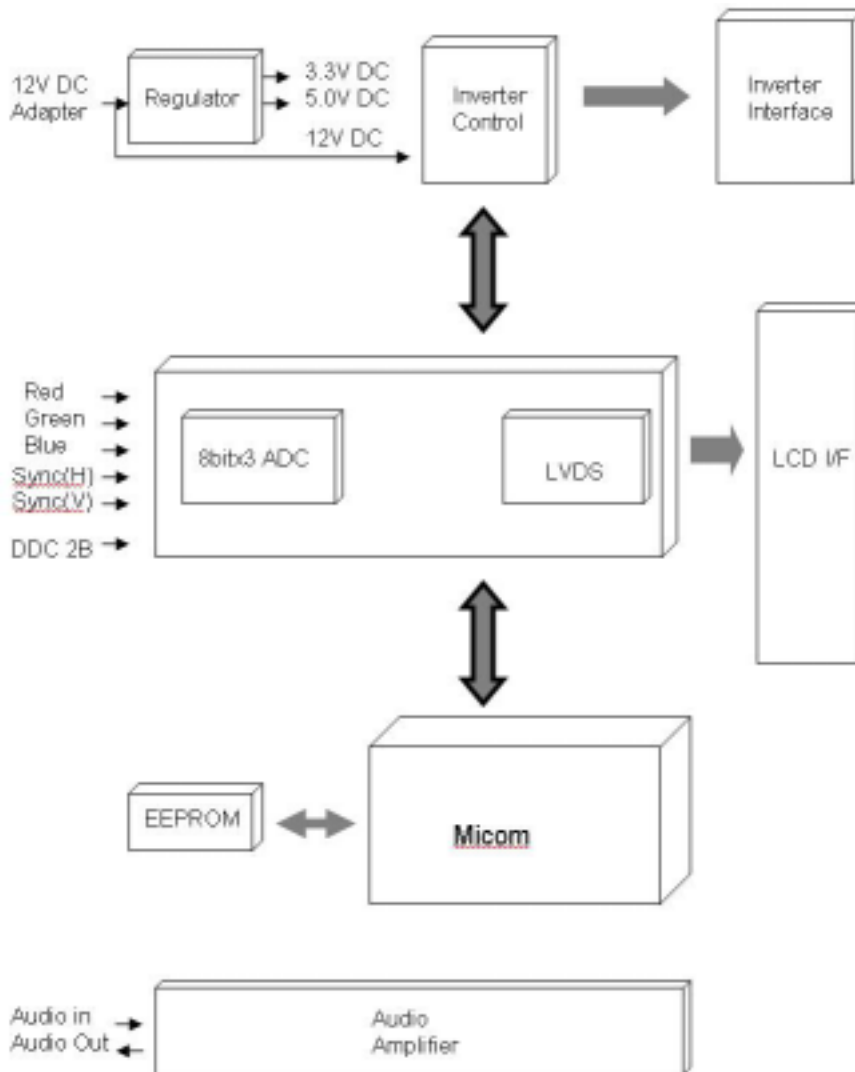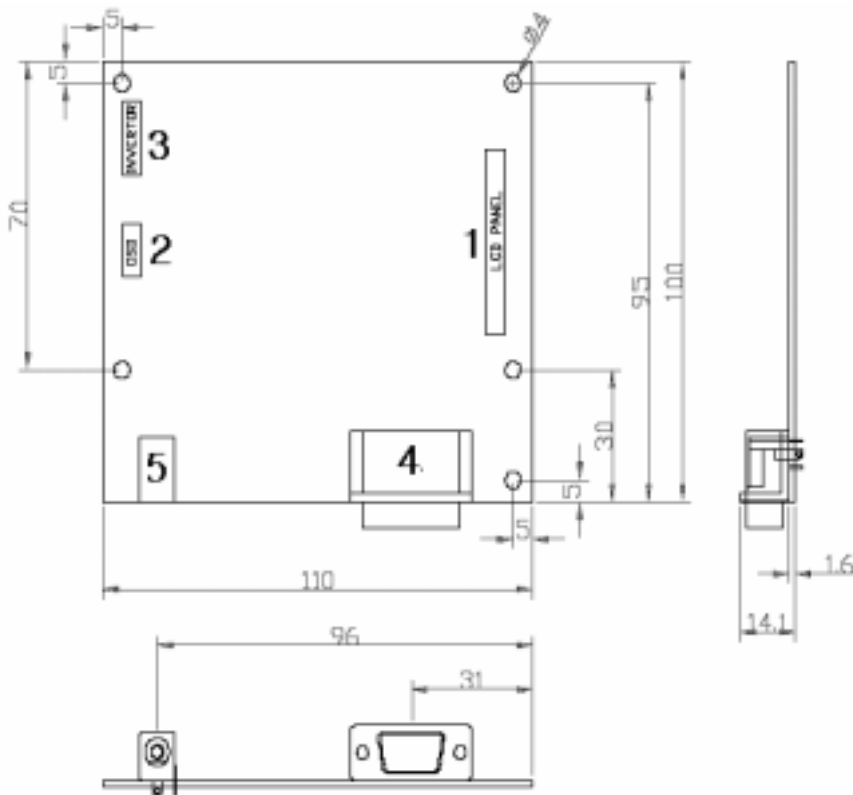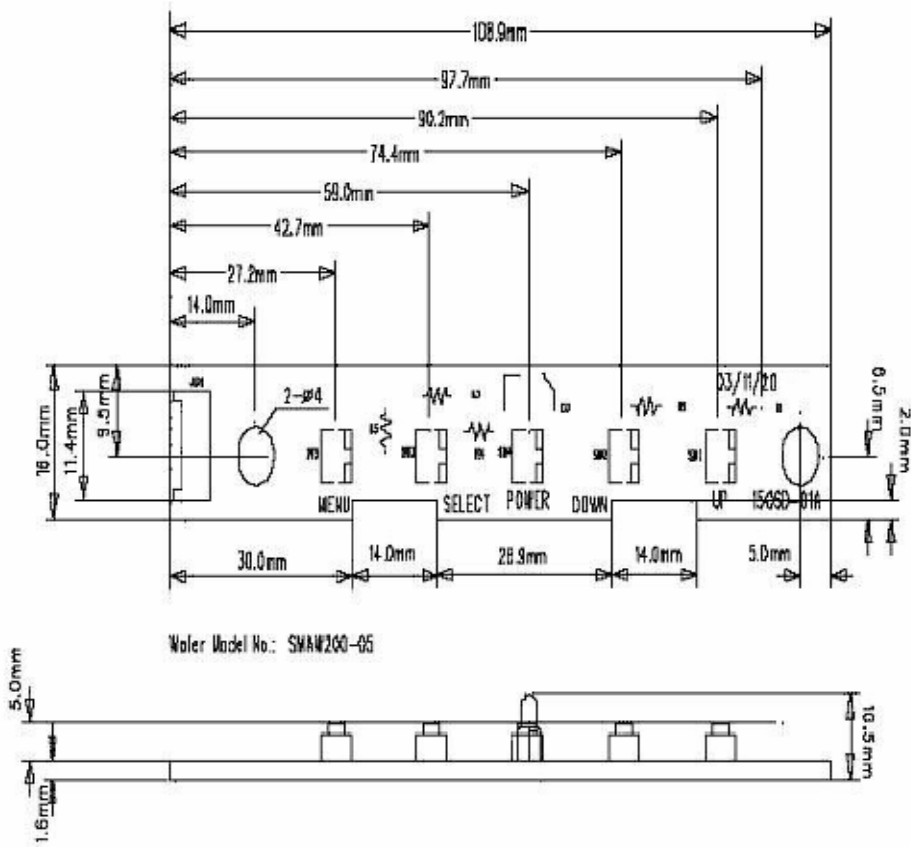
4. PINNING INFORMATION

4.1 DIMENSION & CONNECTORS

Dimension: 100mm (L) x 110mm (W) x 15mm(H)

1. Cable for the LCD panel interface
2. Cable for the OSD board interface
3. Cable for the inverter interface
4. Cable for the VGA interface
5. Cable for the DC in

4.2. OSD Board Dimension

Wafer Model No.: SWAW2GO-05

5. REFERENCE DATA

5.1 LIMITING VALUES

Symbol	Description	Min	Max	Unit
Vdc	12V dc power supply	10.8	13.2	Vdc
Vi(sync)	Input Signal (Sunc,Gnd)	0.5	1.0	Vdc

In accordance with the Absolute Maximum Rating System (IEC 134)

5.2 FEATURES

Parameter	Value	Unit

Overall Dimension
  Width
  Height
  Length (from PCB bottom)
	
	110
	15
	100
		
		mm
		mm
		mm

Max output Resolution	640 x 480	pixels
Data processing	6 x 3	Bit

Input Impedance
  RGB
  Sync.
	
	75
	470
		
		Ohm
		Ohm

Sync. Polarities	+ / -	
Sync. level	TTL	
Supply Voltage	12	Vdc
Max number of colors	242,144	colors
Operating Temperature	0~50	
Storage Temperature	-20~70	
Max weight (board only)	60	g

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5.3 ELECTRICAL PARAMETERS

Temperature 25 ° C

Symbol	Description	Min	Typ	Max	Unit
Vcc	12V dc	10.8	12.0	13.2	V
$Vi_{(sync)}$	Video input signal	0.5	0.7	1.0	Vpp
Fs	Video sample rate			80	MHz
F_{HS}	Hsync Freq'	30		50	KHz
F_{vs}	Vsync Freq'	56		75	Hz
F_{SIH}	Sync input High level	2.5			V
V_{SIL}	Sync input Low level			0.8	Vdc
I_{DD2}	Supply current 12V (w/ LCD&Inverter)	2.0		2.5	A

Notes

1. Power consumption measuring condition is 2pixel checkerboard pattern @ VGA 75Hz and maximum brightness with LG 6.4" TFT-LCD Panel & inverter at t_A 25°C.

6. Applicable Graphic Mode

The microprocessor measures the H-sync , V-sync and V-sync/H-sync polarity for RGB inputs,
And uses this timing information to control all of the display operation to get the proper
Image on screen.

This board can detect all VESA standard and MAC Graphic modes shown on the table
Below and provide more clear and stable image on a screen.

The factory preset supported modes include:

Mode	Resolution (Polar.)	Refresh rate [Hz]	H-freq' [KHz]	Pixel freq' [MHz]	Remarks
VGA	640 X 350 (P,N)	70	31.43	25.144	VESA Std.
VGA	720 X 400 (N,P)	70	31.43	28.287	VESA Std.
VGA	640 X 480 (N,N)	60	31.469	25.175	VESA Std.
VGA	640 X 480 (N,N)	75	37.500	31.500	VESA Std.

Notes
1. All mentioned modes are non-interlaced. The maximum and minimum frame rates are determined by the TFTLCD.
2. Factory preset modes are overwritten by additional user alignments for automatic recall. At all times it remains possible to recall the initial factory presets.

7. Setup for Operation

The OSD (On Screen Display) provides certain functions to have clear image and others.
This board supports 2 buttons OSD operation as a standard.
The control functions defined on OSD operation are as below

7.1 Functions on OSD Menu

OSD MENU	DESCRIPTION
Brightness	Adjust the brightness of the screen
Contrast	Adjust the contrast of the screen
Position (H,V)	Adjust the horizontal position of the screen's image
	Adjust the vertical position of the screen's image
Clock (Clock, Phase)	Adjust the horizontal size of the screen's image
	Adjust the focus of the screen's image
RGB (9300K, 6500K, USER)	9300 and 6500 Temperature and User Temperature, Red, Green & Blue
Language	Select one of the Five language(English,French,German,Italian,Spanish)
Information	Applicable Modes
OSD Function	OSD delay time, OSD H/V_Position,
AUTO Adjustment	Automatically adjust the Horizontal position, Vertical position, Horizontal size, and Phase Window's background or characters should be displayed on your Full screen prior to proceed this function. We strongly recommend Cross_Hatch Pattern at full screen and Max. resolution.
EXIT	Exit OSD Menu

7.2 Hotkey Function Definition

OSD KEY	FUNCTION
SEL	AUTO Adjustment. Push 'SEL' twice continuously

7.3 OSD Menu User's Manual

7.2.1 Key Pad Information

NO.	1	2	3	4	5	6
Function	MENU/EXIT	SELECT	POWER	DOWN	UP	LED

MENU   Activate OSD menu or save OSD setting and EXIT
SELECT(SEL)   Change menu select
DOWN   Decrease setting or left shift the menu
UP   Increase setting or right shift the menu
POWER   Turn on or off the main board
LED   Status display
                          Green : Normal operation
                          Red : Power saving mode , Stand-by mode

7.2.2 OSD User's Manual

Press the Menu button to display OSD menu.
Press the SELECT button to enter sub-menu.
Move to Contrast or Brightness setting.
Press the SELECT button to adjust value
Press 'DOWN' or 'UP' button, you can adjust your image.
Press MENU button to save current setting and exit MENU.

[BRIGHTNESS CONTROL]

-Select the control menu allows you to makes adjustments to the Brightness level of the display screen

[CONTRAST CONTROL]

- This control allows you to make adjustments to the contrast of the display screen

[H-POSITION]

- Select this control menu, and then use the 'UP' and 'DOWN' buttons to center the image horizontally on the screen.

[V-POSITION]

- Select this control menu, and then use the 'UP' and 'DOWN' buttons to center the image vertically on the screen.

[CLOCK]

- Select this control menu, and then use the 'UP' and 'DOWN' buttons to expend or decrease the image width to horizontally fill the display screen.

[CLOCK PHASE]

- Select this control menu, and then use the 'UP' and 'DOWN' buttons to adjust the screen image until it looks focused, crisp and sharp.

[COLOR CONTROL]

- Select this control menu, then use The UP' and 'DOWN' buttons to scroll to the desired color temperature.
- Use the button to select the 9300K, 6500K or USER for custom setting.

[COLOR CONTROL - USER]

- Use the button to select the USER for custom setting.

[LANGUAGE]

- Select this control menu, and then use the 'UP' and 'DOWN' buttons to choose from English, German (*DEUTSCH*), Spanish (*ESPAÑOL*), Italian (*ITALIANO*) French (*FRANÇAIS*).

[INFORMATION]

- Select this menu allows you to confirm information of the display.

[OSD]

- Select this control menu, and then use the button to select the duration time for the OSD menu.
- Use the 'UP' and 'DOWN' buttons to select the time, to center the OSD image horizontally & vertically on the screen.

[AUTOADJUST]

- This control will automatically make adjustments to the horizontal and vertical size, horizontal and vertical position, phase and color.

[AUDIO (optional)]

- Select this control menu, and then use the 'UP' and 'DOWN' buttons to increase or decrease audio sound level, mute.

8. Specification

Category		Specification
Panel (LG Philips)	Screen Size	6.4 inches (Diagonal length)
	Display area	130.56(H) x 97.92(V) mm
	Pixel pitch	0.204(H) x 0.204(W) mm
	Type	A-si TFT LCD (Liquid Crystal Display)
	Brightness	250　/m²(typ)
	Contrast ratio	300:1(typ)
	Response time	45ms
	Viewing angle	45/45/15/35(L/R/Up/Down)
	Display Color	262,144 colors
Frequency	Horizontal Frequency	31.4 ~ 37.5 KHz (Auto set)
	Vertical Frequency	56 ~ 75Hz (Auto set)
Input signal	Video Signal	Analog 0.7Vp-p Positive(75 ohms)
	Sync Signal	TTL Level Positive or Negative
Power/Voltage	Voltage use	100~240Vac, 60/50Hz, DC12V 3.3A
Energy Consumption	Regular Energy Consumption	Maximum 40W
	Safe Mode Consumption	Less than 5W
Movement Condition	Temperature	0 °C ~ 50 °C
	Humidity	10% ~ 80%
Option	Touch Screen	Resistive 4 wire
	Protective Glass	TBD on request
	AR Coating Glass	TBD on request

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9. LCD Panel SETTINGS

       This board can support various LCD panels, which has VGA resolution.
The table below shows the model names of LCD panel, jumper setting for LCD power for
each LCD panel that can work with this B/D, up to the "updated date" and we will try continuously
to add the model names of the LCD panel that have been tested.

Manufacturer	Panel Number	Resolution	Brightness	Viewing Angle(deg)
LG Philips	LB064V02	640*480	250	45/45/15/35