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TFT LED Touch Screen User Manual

VM-T101M

VM-T156M

VM-T215M

Before you use the TFT LED touch screen, please read this manual carefully, as a reference, it can help you operate easily.

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The flashing light and red arrow inside the triangle are warning signs indicating that there is high voltage near the product. An exclamation point inside a triangle is also a warning sign, indicating that the product has important instructions.

WARNING: TO PREVENT THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THE WARNING SIGNED PARTS OF THE PRODUCT TO RAIN OR MOISTURE.

一、 Basic Precautions When Using:

- ✧ Please read the instruction manual before operation, follow the instructions in the instruction manual, and pay attention to those warning signs.
- ✧ The DC power comes from the AC/DC adapter, do not connect the AC/DC adapter that does not match the panel, only use the interface we recommend.
- ✧ Do not cover the AC/DC adapter with anything like a cloth or a box, as this will short-circuit the device and a fire accident may occur.
- ✧ Note that with matching AC voltage and frequency, the AC output must provide enough power for the panel. For safety, do not touch the electrode and the grounded socket. A polarized plug has two spacers, one wider. A grounded receptacle has two pads, and a grounding prong. The wide spacer or third prong is for safety. When the provided socket does not meet the electrical output interface, please consult the engineer to replace the interface that meets this electrical characteristic for you.
- ✧ Make sure that the power cord and AC/DC adapter cannot be stepped on or pinched by plugs and convenient outlets.
- ✧ Do not let sunlight or other heat sources shine on the panel, some heat sources like radiation, microwave ovens and other appliances can generate heat.
- ✧ Do not put the panel under high temperature, high humidity, strong electrical radiation.
- ✧ When the temperature changes rapidly, be careful to shrink.
- ✧ Before connecting input and output interfaces such as analog VGA, digital/HDMI/DVI, audio interface etc., be sure to turn off the power of the panel and remove the AC power cord from the power port.
- ✧ Do not move or rotate the panel while power is on.
- ✧ Put the panel on a fixed bracket, make sure the bracket can bear the weight of the panel.
- ✧ Do not place heavy objects on the panel.
- ✧ Do not touch, push or rub the LED screen with any sharp or hard objects.
- ✧ When there is dust on the surface of the LED screen, gently wipe it with a soft cotton cloth or some other soft things, do not use acetone, toluene, alcohol to clean.
- ✧ Wipe off the water or liquid as soon as possible, as the liquid sticking to the surface of the screen for a long time will cause the LED screen to fade and deform.
- ✧ The material of the LED panel can be recycled. When the panel is

discarded, please put its various parts in the appropriate recycling bin.

- ✧ This LED panel can be used for home or business use. If you want to use it in some special occasions or harsh environments, such as high temperature, high humidity, strong radiation etc., please contact our technical staff in time.

二、 Technical Specifications:

(1) Input and output interface introduction

1) PC image simulation VGA interface

This is a D-SUB blue female socket, its resolution can support SXGA 75 Hz, the vertical update frequency is from 50 to 70HZ, and the horizontal frequency can reach 80KHz.

2) HD image digital /HDMI / DVI, CVBS interface

This is a white female socket, and its resolution can support SXGA 75 Hz.

3) PC audio input interface

This is a black 3.5mm earpiece jack, which is connected to the output port of the PC sound card and is a stereo input channel.

4) DC power input interface

This is a black DC power interface with a positive pole in the middle and a diameter of 2.0mm. The power supply of the panel comes from this interface.

(2) Basic function description

1) D panel with high brightness, high contrast, fast response time, TFT LED display unit is based on high quality, high efficiency drive circuit.

2) Wide viewing angle.

3) High resolution, rich colors.

4) Stylish and slender appearance.

5) Convenient GUI OSD menu operation, you can operate the panel with buttons or remote control.

6) Low power consumption, healthy, keep the environment tidy.

(3) Panel attachment

Please check whether the accessories are complete before using the LED panel.

- 1) A LED panel host
- 2) One AC/DC adapter with AC power cord 3 meters long
- 3) A D-Sub 15-pin, male to female PC VGA cable 1.5m
- 4) A male-to-male HD-HDMI cable 1.5m
- 5) A user manual
- 6) A male-to-male USB cable is 1.5 meters long

三、 OSD Menu Introduction:

The OSD menu buttons of this driver board are generally divided into two specifications. Please refer to the previous schematic diagram for the specific button board and connection:

(A)、5 key operation: 〈OPEN/CLOSE〉 (POWER), 〈MENU〉 (MENU), 〈RIGHT〉 (UP) or 〈+〉 〈LEFT〉 (DOWN) or 〈-〉, 〈AUTOMATICALLY ADJUST THE PICTURE〉 (AUTO)

The OSD menu adjustment content includes the following five major items: (Audio), (Bright-Contrast), (Color)。

Generally, the 5-key operation is commonly used, and the function of each key is as follows:

〈OPEN/CLOSE〉 / (POWER): Use this key to turn the monitor on or off.

〈MENU〉 / (MENU): Use this key to open the OSD menu and activate the first submenu item on the top level. If you continue to press this key, you will enter (that is, select/pop up) the lower menu of the activated menu item. This operation is cyclic. In addition, because this key is also equivalent to the <select> key, the exit menu is also completed by it.

〈LEFT〉 / (DOWN) OR 〈-〉: Use this key to highlight a menu item, move the menu highlight bar to the left, or decrease the value in some menu items with values (parameters).

〈RIGHT〉 / (UP) OR 〈+〉: Use this key to highlight a menu item, move the menu highlight bar to the right, or increase the value in some menu items with values (parameters).

〈AUTOMATIC〉 / (AUTO): Use this key to automatically adjust image position and phase. When the image is not in full screen state (such as in DOS mode) or when a splitter is connected, the image position may deviate after automatic adjustment. At this time, you need to enter the OSD menu to manually adjust the horizontal or vertical position and phase.

The following is the detailed OSD menu introduction:



Contrast: use 〈RIGHT〉 / (UP) / 〈+〉 key or 〈LEFT〉 / (DOWN) / 〈-〉 key to adjust the value of the contrast, press 〈MENU〉 / (MENU) key to save



Brightness: use 〈RIGHT〉 / (UP) / 〈+〉 key or 〈LEFT〉 / (DOWN) / 〈-〉 key to adjust the brightness value, press 〈MENU〉 / (MENU) key to save



Color: adjust (Red)、(Green)、(Blue) The three primary colors and their mixed color properties, press 〈MENU〉 / (MENU) key to save

press 〈MENU〉 / (MENU) key to enter. Specifically, it includes the following

submenu:



Auto color: press **<MENU> / (MENU)** key to choose, adjust (Red), (Green), (Blue) the balance of the three primary colors, press **<MENU> / (MENU)** key to save



sRGB: press **<MENU> / (MENU)** key to choose, make the image color conform to the industry's unified sRGB standard



Color temperature: press **<MENU> / (MENU)** key to choose, enter its next submenu, press **<LEFT> / (DOWN) OR <-> OR <RIGHT> / (UP) OR <+>** key to moving light bar, select desired submenu item, press **<MENU> / (MENU)** key to save



User adjustment: press **<MENU> / (MENU)** key to choose, enter its next submenu, then press **<MENU> / (MENU)** key to select adjustment (Red), (Green) or (Blue) display scale (value), press **<MENU> / (MENU)** key to save



Color Temperature Value: press **<LEFT> / (DOWN) OR <-> OR <RIGHT> / (UP) OR <+>** key to moving light bar, press **<MENU> / (MENU)** key to select desired color temperature value, press **<MENU> / (MENU)** key to save



Image phase: press **<MENU> / (MENU)** key to enter after selection, press **<LEFT> / (DOWN) OR <-> OR <RIGHT> / (UP) OR <+>** key to adjust, to stabilize the image, remove noise



Image width: press **<MENU> / (MENU)** key to enter after selection, press **<LEFT> / (DOWN) OR <-> OR <RIGHT> / (UP) OR <+>** key to resize the width of the image, press **<MENU> / (MENU)** key to save



Image horizontal position: press **<MENU> / (MENU)** key to enter after selection, press **<LEFT> / (DOWN) OR <-> OR <RIGHT> / (UP) OR <+>** key to adjust the horizontal position of the image displayed on the screen, press **<MENU> / (MENU)** key to save



Image vertical position: press **<MENU> / (MENU)** key to enter after selection, press **<LEFT> / (DOWN) OR <-> OR <RIGHT> / (UP) OR <+>** key to adjust the vertical position of the image displayed on the screen, press **<MENU> / (MENU)** key to save



Image Auto Adjust: Press the **<MENU> / (MENU)** button from the topmost **<Image>** menu to enter and select this menu **(RESET)** to automatically adjust the position and phase of the image



Tools: Press <MENU> / (MENU) key to enter after selection<Tools>the next submenu of the menu, the adjustment content includes OSD, factory reset (Reset), (Sharpness), DOS text/graphic mode (640/720), (Language), etc.



The entrance to adjust some parameters of the OSD menu itself: Press <MENU> / (MENU) after selecting the key, enter the detailed submenu of the next layer



Display time of OSD menu: Continue to press the<MENU>/<MENU> button to enter the OSD menu itself to display the time setting on the screen, and then press the<LEFT>/<DOWN> or <-> or <RIGHT>/<UP> or <+> button Decrease or increase its display time



OSD menu horizontal display position : Under the OSD menu option, press the<MENU>/<MENU> key to select and enter, press <LEFT>/<DOWN> or <-> or <RIGHT>/<UP> or <+> key to adjust the horizontal position of the OSD menu itself displayed on the screen, press <MENU> / (MENU) key to save



OSD menu vertical display position: Under the OSD menu option, press the <MENU>/<MENU>key to select and enter, press<LEFT>/<DOWN> or <-> or <RIGHT>/<UP> or <+> key to adjust the vertical position of the OSD menu itself displayed on the screen, press <MENU>/<MENU> key to save



Factory reset (Reset): Press the<MENU>/<MENU> key to select under the OSD menu option to restore the monitor to the factory initial value, which is convenient for use when misoperation or cannot be adjusted back to the initial setting



Sharpness: Under the <Tools> menu option, press the<MENU>/<MENU> key to select the <Sharpness> submenu, then press<LEFT>/<DOWN> or <-> or <RIGHT>/<UP> or <+> key to adjust the sharpness, press<MENU>/<MENU> key to save



DOS text/graphics mode: Under the <Tools> menu option, press the<MENU>/<MENU>key to select the <DOS Text/Graphics Mode> submenu, and press the<MENU>/<MENU>key to confirm. This is used for setting when the image position is incorrect in DOS mode,press<MENU>/<MENU> key to save



Language: Under the <Tools> menu option, press the<MENU>/<MENU>key to select the <Language> submenu, then press the<LEFT>/<DOWN> or <-> or <RIGHT>/<UP> or <+>key Select <Chinese> or <English>,

then press the<MENU>/<(MENU)>key to confirm saving and exit



Chinese:Indicates that the OSD menu language is simplified Chinese



Audio: Press the<MENU>/<(MENU)>button to enter the sub-menu of the <Sound> menu, the adjustment content includes <Volume> and <Mute>



Volume: Press the <MENU>/<(MENU)>key to enter the <Volume> submenu, then press the<LEFT>/<(DOWN)> or <-> or <RIGHT>/<(UP)> or <+> key to adjust the volume



Mute: Press the <MENU>/<(MENU)>key to enter the <Volume> submenu, then press the <LEFT>/<(DOWN)> or <-> or <RIGHT>/<(UP)> or <+> key to select mute,that is,turn off the sound



Exit: Press this key to exit the current menu and return to the previous menu



OK/Yes: This happy icon is a confirmation of correct operation



Error/No: This regret icon means to confirm whether the operation was wrong



Input port selection: Choose PC's analog VGA or digital HDMI input



Select analog VGA input



Select digital HDMI input

四、 Frequently Asked Questions:

First, please set the working voltage of the LED (3.3V, 5V, or 12V); pay attention to figure out the connection relationship between the high-voltage board (Inverter) LED, key board, etc. and the driver board, and install the driver of the computer graphics card.

1)、No display, indicator light off

Check whether the power supply and its connection are correct

2)、No display,the indicator light is red

Whether the VGA cable is connected correctly,whether the computer is working normally or in standby power saving state

3)、No display,indicator light is green,no backlight

Check the connection of the high voltage board (Inverter) and whether it is working properly

4)、Once powered on, or when the display mode is switched,the LED screen is white

Check the connection of the high voltage board (Inverter) and whether it is working properly

5)、Blank or blurred screen

Check whether the working voltage setting of the LED is correct,whether the program is correct,whether the LED signal line is correct,whether the LED is good

6)、Prompt "(Input Not Supported)" or " (Out Of Range)"

Whether the output resolution and vertical frequency (Vertical Hsync) of the computer graphics card are too high,such as exceeding SXGA 75 Hz. We recommend using the optimal frequency for LED—60Hz

7)、The image is in the wrong position,but it cannot be adjusted automatically or manually

Check that the program is correct

8)、The image has interference such as water ripples or bright spots

Check whether the LED signal line or the input VGA cable of the driver board is too long or its quality is too poor

9)、Image casts or lacks color

Check whether the input VGA cable and LED signal line of the driver board are in poor contact or broken

10)、The volume of the speaker is not loud or there is a lot of noise

Pay attention to choosing a speaker with a suitable caliber,paper cone and magnet.Generally, 1~2 W/4ohm is better.

Attachment:This driver board supports the following input modes:

VGA

640 x 480 -- 60 Hz

640 x 480 -- 72 Hz

640 x 480 -- 75 Hz

640 x 350 -- 70 Hz

720 x 400 -- 70 Hz

SVGA

800 x 600 -- 56 Hz

800 x 600 -- 60 Hz

800 x 600 -- 72 Hz

800 x 600 -- 75 Hz

XGA

1024 x 768 -- 60 Hz

1280 x 1024 -- 60 Hz

1024 x 768 -- 70 Hz

1280 x 1024 -- 70 Hz

1024 x 768 -- 75 Hz

1024 x 768 -- 72 Hz

1280 x 1024 -- 75 Hz

五、 Capacitive touch catalog:

1 Sample Specification

1.1 Product name Code No.: Transparent touch panel

1.2 Scope

This specification shall apply to metal pen or finger input transparent capacitive touch panel.

1.3 Features and General Specifications

1.4 Environment Conditions

Items	Value
Operating temperature & Humidity	-20℃~+70℃:
Storage temperature & Humidity	-30℃~+80℃:

1.5 Mechanical characteristics

Items	Value
Optical characteristics	Transparency Greater than 86%
Hardness	6H

1.6 Solution and Electric characteristics

Items	Specifications
Main control board IC model	ILI2210
Power consumption	working status 130mA(Max.)
	idle state 650uA(Max.)
	Off state <120uA
Touch point	5 points
Linear equation	<2%
SNR	>200db
Operating voltage	USB powered by 2.8~5.0V
ESD Contact surface (Contact)	plus or minus 4KV,10times
ESD Contact surface (air)	plus or minus 8KV,10times
Communication interface	IIC

2 Appearance limit standard

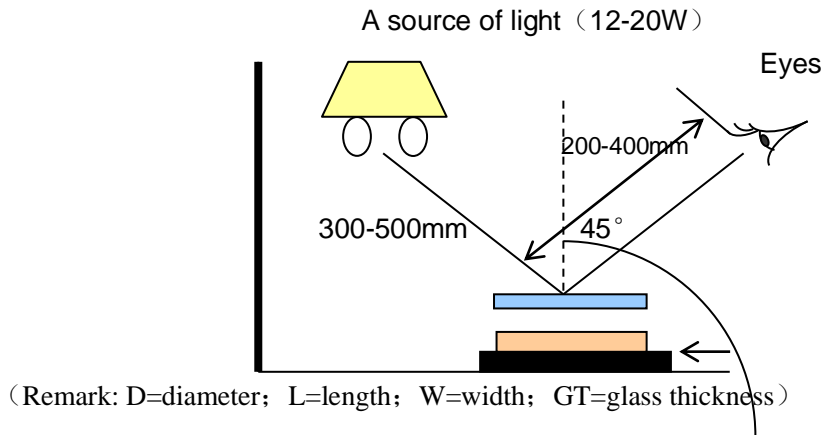
2.1 Scope

Touch panel visible side.

2.2 Inspection conditions

(1) The brightness in text site:500LUX

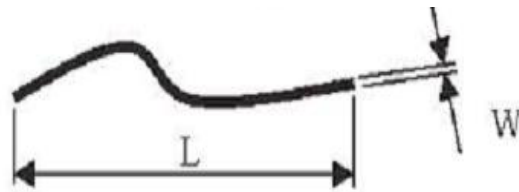
- Light conditions:500LUX
- (2) Inspection distance:30cm
- Detection distance:30cm
- (3) visual angle:> 60°
- Detection angle: > 60°
- (4) light source:40W natural light
- Power strength: 40W



2.2-1

visual area

Scratch



CRITERIA	DECISION
$W < 0.03\text{mm}$	Ignored.
$0.03\text{mm} \leq W \leq 0.05\text{mm}$	$L < 3\text{mm}$, two objects are ignored. $5\text{mm} > L > 3\text{mm}$, one objects are ignored
$W > 0.05\text{mm}$	The T/P is regarded as a defect.

2.2-2 Dot-like Foreign Matter

CRITERIA	DECISION
$D < 0.25\text{mm}$	Ignored

0.25mm≤D≤0.35mm	The object is >10mm in distance from any other foreign object. Three objects are allowed.
D>0.35mm	The T/P is regarded as a defect.

2.2-3 Linear Foreign Matter

CRITERIA	DECISION
W<0.03mm	L≤3mm Ignored.
0.03≤W≤0.05mm	L≤3mm, the object is >10mm three object is ignored.
W>0.05mm or L>3mm	The T/P is regarded as a defect.

2.2-4 OCA bubbles and bend

CRITERIA	DECISION
The diameter of point-like bubbles in the V/A area is less than 0.25mm, 3 are allowed, and the slight wave deformation of OCA does not affect the deformation of FILM, which is acceptable	OCA point-shaped bubbles are measured with inspection gauges, OCA is slightly deformed by waves, and the product needs to be placed flat under the inspection light source at 300~400mm to inspect and observe whether there is any change in the FILM

➤ Non- visual area(overlay)

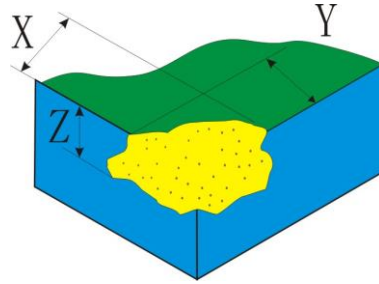
2.2-5 Dot-like Foreign Matter

CRITERIA	DECISION
D<0.25mm	Ignored
0.25mm≤D≤0.35mm	Two objects are allowed.
D>0.35mm	The T/P is regarded as a defect.

2.2-6 Chip And Crack

<p>Corner fragment: X<2.0mm and Y<2.0mm and Z<GT it is ignored</p> <p>1) Corner fragment in the golden finger that seriously affects the product function is regarded as a defect.</p> <p>2) Corner fragment in the circuit that seriously affects product function is regarded as a defect.</p> <p>Corner break: X<2.0mm , Y<2.0mm and Z<GT, ignored</p> <p>1) If the corner fracture is located at the golden finger, it will seriously affect the function of the product, and T/P is a defective product..</p>
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2) If the corner fracture is located on the line, it will seriously affect the function of the product, and T/P is a defective product.



Side fragment: $X < 5.0\text{mm}$ and $Y < 1.0\text{mm}$ and $Z < \text{GT}$ it is ignored

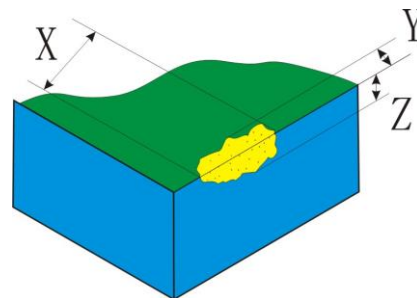
1) Side fragment in the golden finger that seriously affects the product function is regarded as a defect.

2) Side fragment in the circuit that seriously affects product function is regarded as a defect.

Edge break: $X < 5.0\text{mm}$, $Y < 1.0\text{mm}$ 和 $Z < \text{GT}$, ignored

1) If the edge fracture is located at the golden finger, it will seriously affect the function of the product, and the T/P is a defective product.

2) If the edge fracture is located on the line, it will seriously affect the function of the product, and T/P is a defective product.



2.2-7 others: This specification is considered as basic on the products, but details are subject to discussion upon individual customer requirement.

(1) Support System:

1. USB drive-free system support: windows/XP/Android
2. Need to debug direction system: Apple (requires separate debugging) LIU system/Raspberry Pi, etc.

(2) The interface that needs to install the driver:

3. R232 serial port: all systems are single point and need to install the driver to use