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# **Interactive IR Touch LCD Display**

## **User Manual**

V20120425

Please retain this manual properly for future reference.

This is the general manual for IR Touch LCD Display and there might be slight differences between the actual product and the descriptions.

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## Notes

- The product components which supply voltage is greater than safety voltage should be installed or placed out of children's reach.
- Do not use other power cords except for the official one as this could cause a burning hazard.
- Unqualified service personnel do not open the housing as there might be an electric shock.
- Make sure the line voltage corresponds to the power of the receiving host before use. Unplug the receiving host when unused for long periods of time.
- Must use the three-phase power socket and make sure there is a ground contact.
- Do not install or place the device near any heat sources, such as furnace, heat transfer tube, power amplifier, etc. Do not expose this device to direct sunlight, dust and moisture. Do not install the device in any place which have mechanical vibrations or would get vulnerable strike. For better performance, it should be placed far away from high voltage transmission grid, large metal objects, radar station and any other equipments alike.
- Disconnect the power immediately and unplug when there is abnormal sound or smell in the device. Do not use the device and call the qualified service personnel for maintenance.
- Disconnect the device power and unplug when unused for long periods of time.
- There should not be any liquid or other metals in the device. If any, power off and disconnect the power and call the qualified service personnel.
- Should not use the chemical reagent for device body cleaning cause it will make the housing deteriorated or damage the paint. For any dust or dirt, wring out a warm cloth and clean it after power disconnected. The IR Touch LCD Display could be gently wiped with a clean soft cloth.
- Do not turn on and off the device frequently cause it will shorten the service life of the device. Turn on the device three minutes later after a normal power off.
- Do not set the brightness and contrast ratio to maximum in long term so as to lengthen the service life of the device.
- Do not place the device on unstable stand、 bracket or desk, or else the device might tip over and get damaged.
- Should be careful when moving the device to avoid strike and squeeze , especially for the screen cause the glass might be broken.
- Should follow the operation manual of the manufacturer and install this device and should only use the accessories for installation recommended by the manufacturer.
- The wall mounting of the device is only applicable in normal cement wall、 solid masonry wall and wood siding wall that could bear more than three times the weight of the device and there should be good ventilation; For the special wall(Steel structure wall、 hollow structure wall、 glass or marble wall etc.), the wall ability to bear the device should be analyzed to make sure there will be no

- risk.
- ➔ Do not expose the device to direct sunlight since it will accelerate the device aging and might cause abnormal working of the touch device.
- ➔ Do not write on the touch screen with hard objects in case it will scratch the glass and has bad display effect.

## Introduction

The Interactive IR Touch LCD Display is an independent R & D and produced Human-Computer Interactive product. It is a multi-function teaching device with functions of interactive teaching、digital demo、multi-media presentation、touch control operation and handwriting input. From design and production, it is with the fully consideration of application features of education industry. This device has the advantages of convenience for observing and operating, all-digital intelligent control, writing、modifying and deleting freely on the screen with fingers or light-proof objects. This writing board is an ideal device for modernized education.

## Features:

- ➔ Especially design for teaching and meeting system.
- ➔ High brightness and contract ratio display and clearly visible in bright light or indoor and outdoor environment.
- ➔ One key power saving mode (the backlight brightness was lowered and power saved) when there is a need for low brightness during operation.
- ➔ With advanced IR scanning sensor technology and HID drive free, plug and play.
- ➔ The graphic processing is based on vector graphics with high compression and no distortion etc.
- ➔ Multiple pen types,line widths and colors.
- ➔ Strong edit function and support real-time edition.
- ➔ Multiple backgrounds and support custom backgrounds,free insert of figures and images.
- ➔ Intelligent recognition of geometric figures. With features of variety figures recognition,high discrimination and multi-pen recognition etc.
- ➔ Ink-brush simulation with vigorous and forceful calligraphy.
- ➔ Written documents can be saved as formats in PDF,GIF,PNG,TIFF and BMP etc.
- ➔ Simulate mouse operation.
- ➔ Dual-point touch and multi-finger roaming.

- User management with functions of user adding and deleting, user switchover and user customization etc. This enables the software configuration close to user's operation habits.
- Support other apps.
- Handwriting English, numbers and special characters recognition.

## Basic Operations

### Power On

- Power the Touch LCD Display with 100~240V 50/60Hz AC.
- Turn on the ship form switch on the bottom of the Touch LCD Display (beside the power interface) to power on(the indicator light is red).
- Press "Power" on the Touch LCD Display or "Standby" on the remote control to switch on the Touch LCD Display (the indicator light is green now). Press "Computer" to turn on the computer(only applicable to the model with built in PC).

### Power Off

- If you want to turn off the touch LCD display temporary, press "Power" on the touch LCD display. Press "Computer" on the panel to turn off the computer when it is in the ON status(only applicable to the model with built in PC).
- If you want to turn off the touch LCD display completely, turn off the ship form switch on the bottom of the touch LCD display (beside the power interface) or unplug the power cord.
  - \* For the model with built in PC, turn off the PC and disconnect the power.

## Software Installation

#### **Recommend system configuration:**

CPU: Inter(R) Core i3 2.27GHz or AMD CPU with same performance

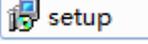
RAM: 1G

Hard disk: 1G free space

Video card: Support DirectX 9 or higher

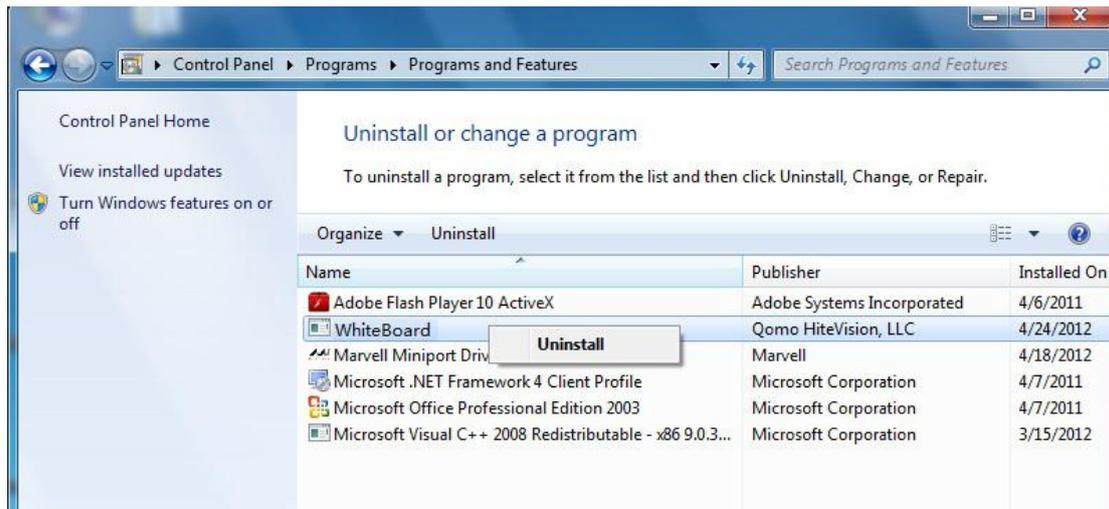
- The touch LCD display with built-in computer has installed the latest version of

the writing software by factory default can skip the following steps.

- HID free drive function is only applicable to Vista, Windows 7 or higher version(realize the functions of multi-touch etc.). The touch LCD display with Windows XP version should install/run the software for normal use.
  - Insert the official USB cable into the USB ports of the computer and touch LCD display.
  - Insert the official software installation disk into the computer.
  - Double click the  , follow the instructions and complete the installation of the touch LCD display software.
  - The computer needs to restart so as to activate the software after installation completed. Save all the files in the computer and restart .

## Software Uninstallation

If you are sure to delete the touch LCD display software from your computer, click "Add or Remove Programs" in "Control Panel". Choose " WhiteBoard " and click "Uninstall" to uninstall.



## Software Calibration

To work normally, the handwriting of the projected image on the touch LCD display should coincide with the actual one so as to calibrate accurately. The following situations need calibration.

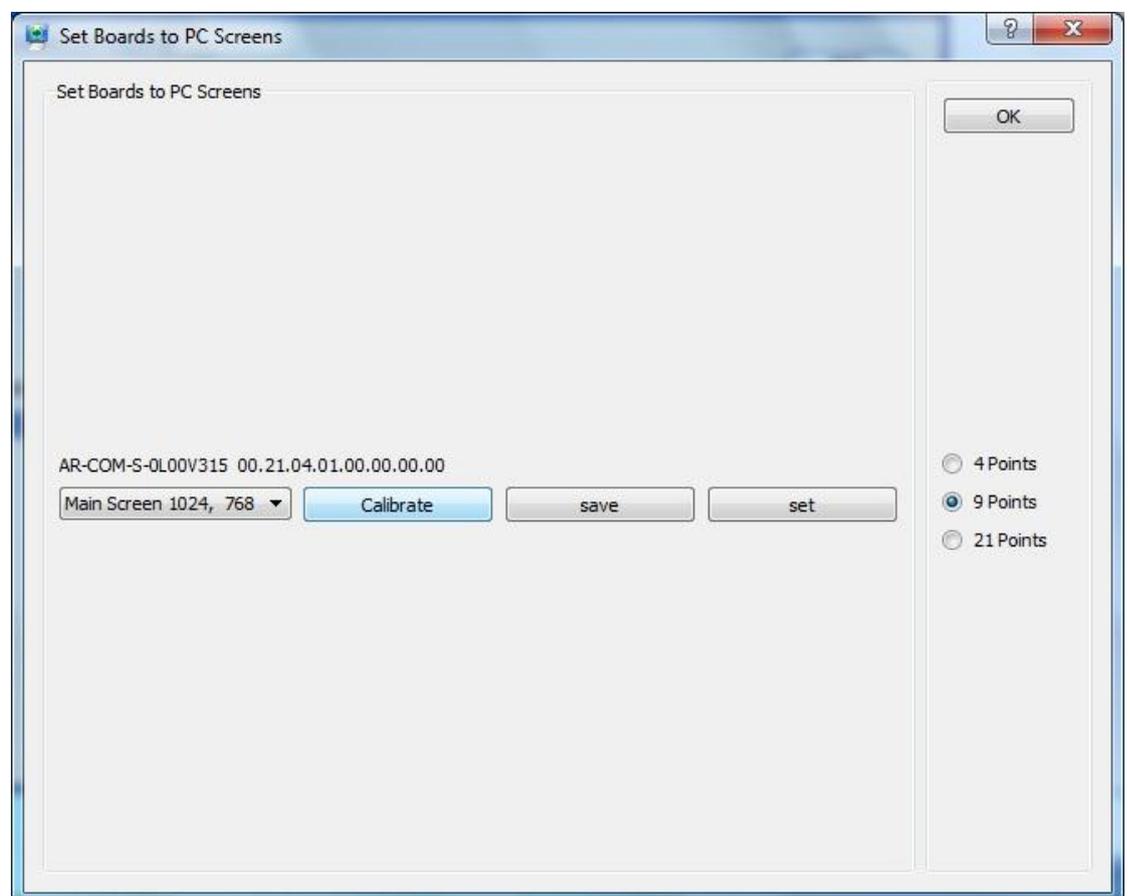
- The touch LCD display is used for the first time.
- The drive has been reinstalled.
- The computer connected to the touch LCD display is changed

The touch LCD display is with nine-point calibration. Steps are as follow:

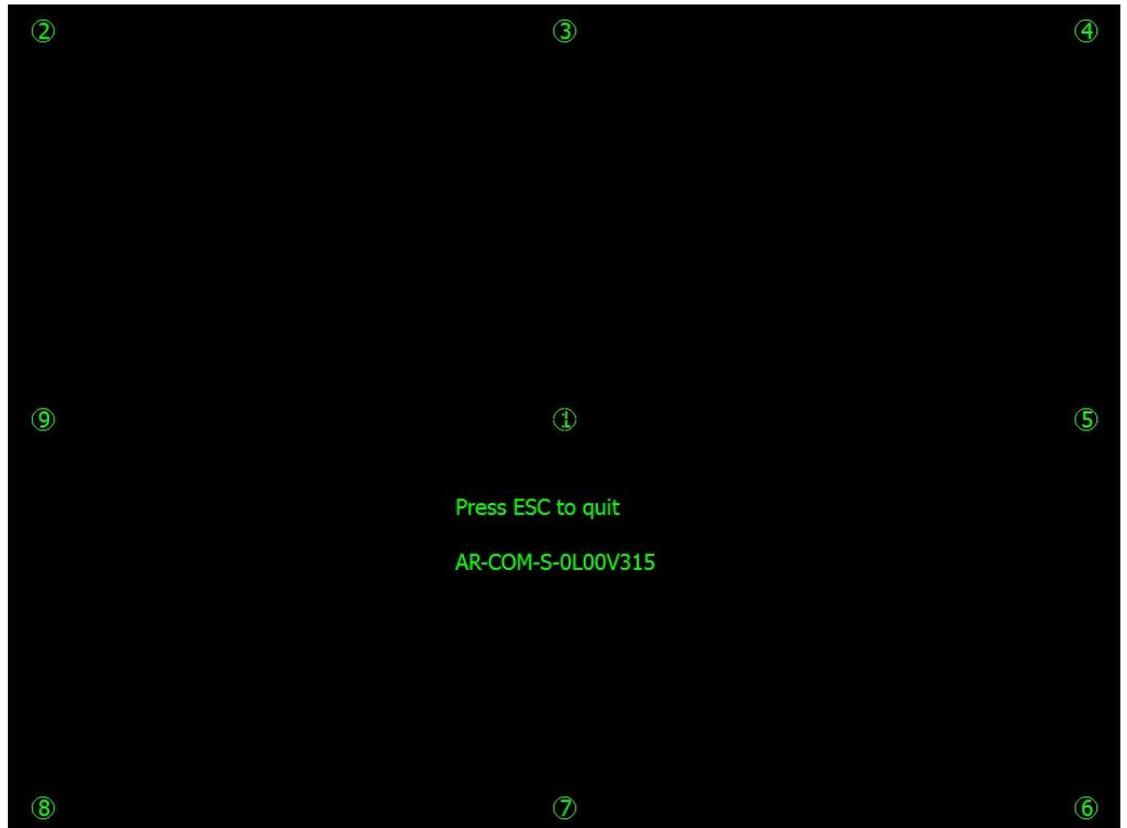
1. Connect all devices necessary and run the touch LCD display drive.
2. Click the drive icon of the touch LCD display at the right bottom of the screen and you can see the following:



3. Choose "9 Points" and click "Calibrate" as follow:

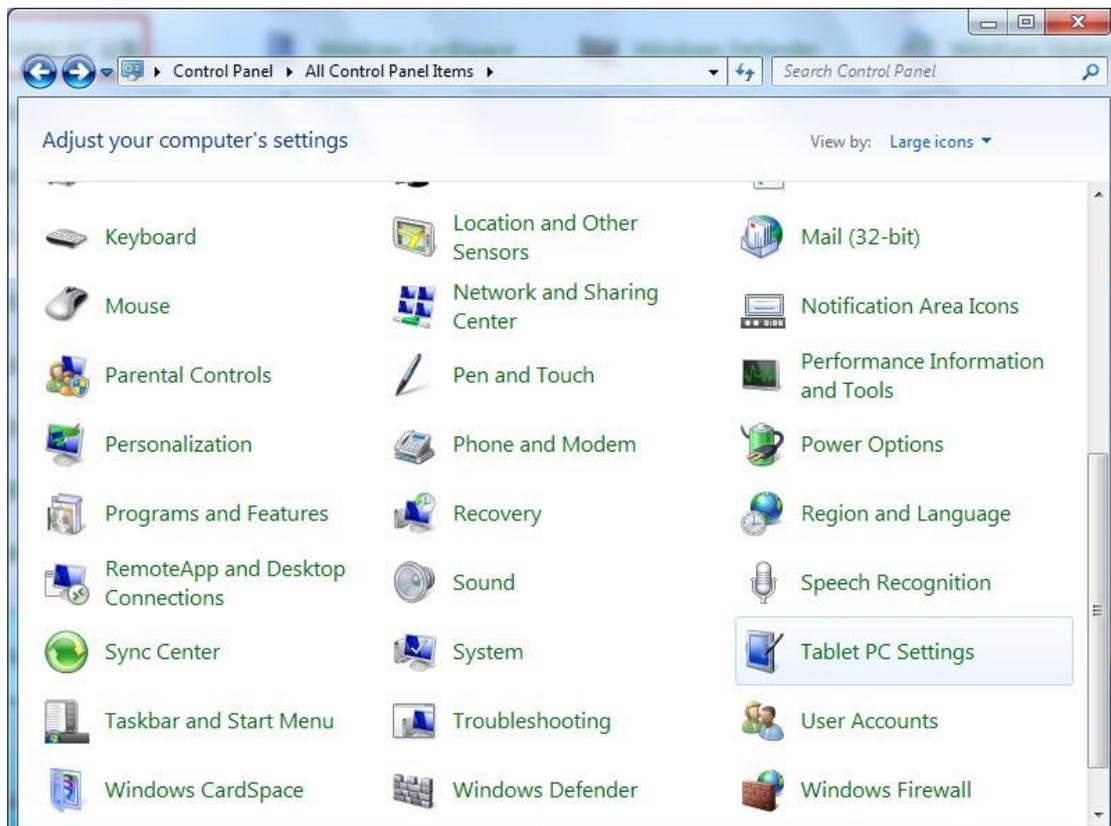


4. Vertically touch the centre of the flashing "+" with the touch LCD display pen tip until the flashing "+" move to the next calibration point and thus one point is calibrated. Follow the instructions in the calibration interface and complete the calibration of other points. The software will return to desktop automatically once calibration completed.



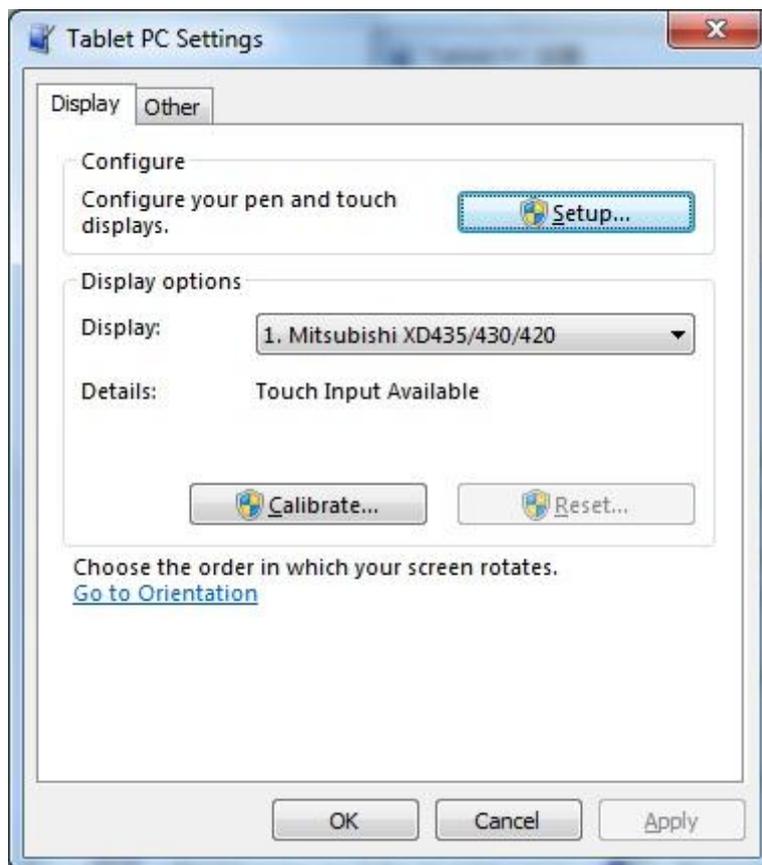
Calibration for Windows 7 version:

1. Connect the PC and writing screen touch USB port with the official USB cable.
2. Choose "Tablet PC Set" in "Control Panel".



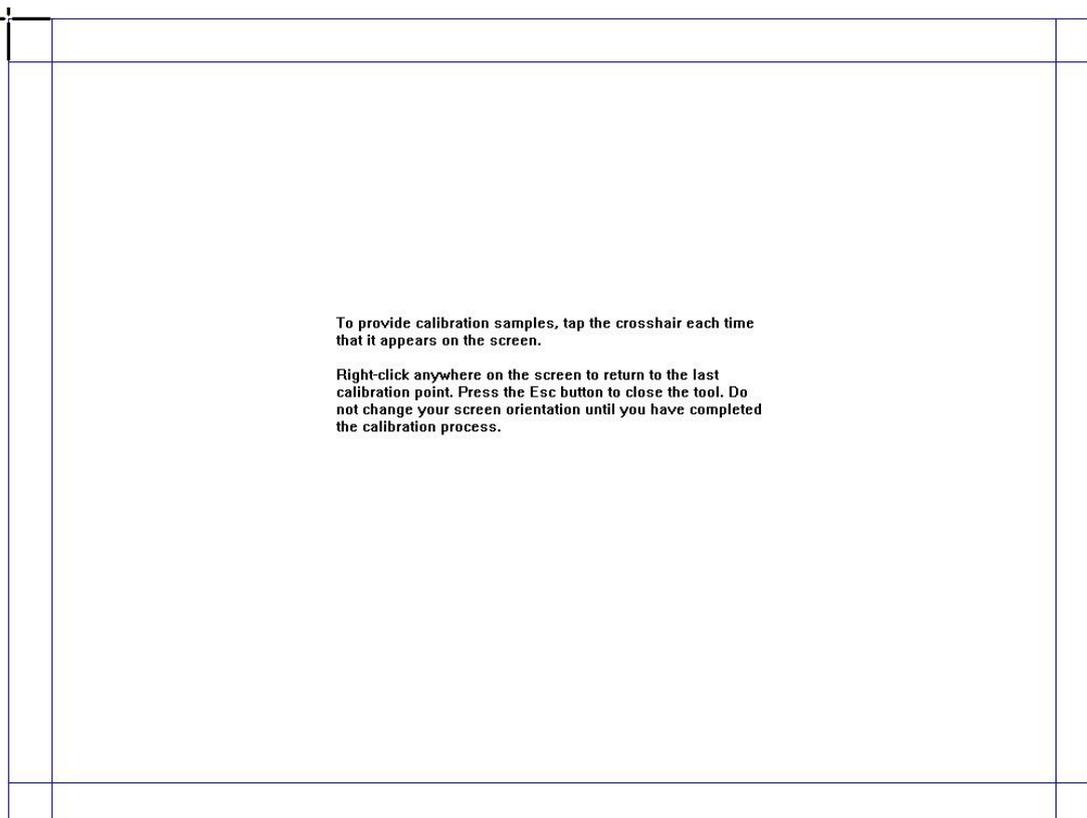
## Tablet PC Set

Choose  in Tablet PC Set window.



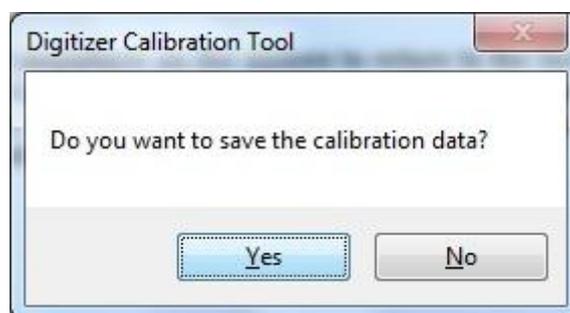
Tablet PC Set

Vertically touch the centre of the flashing "+" with the writing screen pen tip until the flashing "+" move to the next calibration point and thus one point is calibrated. Follow the instructions in the calibration interface and complete the calibration of other points.



Calibration Interface

Click "Yes" to complete calibration.



Calibration Completed



Notes:

- For good writing accuracy, you should use the official pen to calibrate. Do not calibrate with your finger.
- Wrong calibration may lead to the abnormal function of the touch screen and this requires recalibration.
- Pressing "ESC" during calibration can cancel the current calibration operation.

- ➔ There are minor differences between the calibration interfaces of different version softwares. Follow the instructions in actual interface and calibrate.

## OSD Menu Introduction

### Passageway Selection

1. Press "Signal Source" in the remote control to get the signal source list.
2. Press ▲▼ to choose the desired signal passageway.
3. Press "Confirm" to enter the passageway.

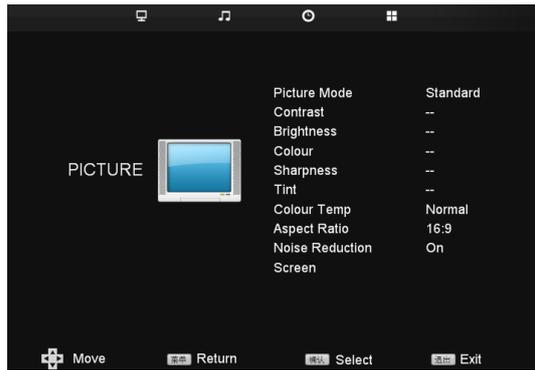


## Screen Menu

### Computer Mode



Press "Menu" and you can see video, sound, time and set. Press ▲▼ or ◀▶ to choose submenu and adjust the value. Press ▲▼ or ◀▶ to choose the desired menu from the submenu(brightness display).

**Picture Menu****Picture Mode**

Press ▲▼ to select Image Mode and "Confirm" to choose.

**Contrast Ratio**

Press ▲▼ to select Contrast Ratio and "Confirm" to set.

**Brightness**

Press ▲▼ to select Brightness and "Confirm" to set.

**Color**

Press ▲▼ to select Color and "Confirm" to set.

**Sharpness**

Press ▲▼ to select Sharpness and "Confirm" to adjust..

**Hue**

Press ▲▼ to select Hue and "Confirm" to adjust.

**Color Temperature**

Press ▲▼ to select Color Temperature and "Confirm" to choose.

**Zoom Mode**

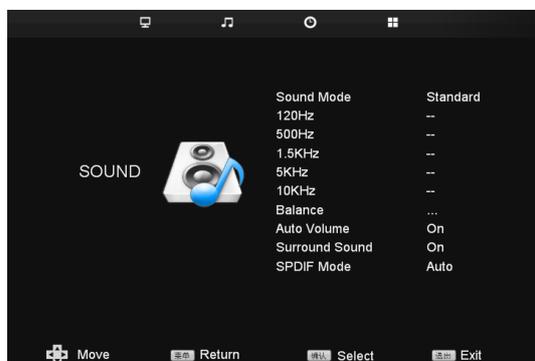
Press ▲▼ to select Zoom Mode and "Confirm" to choose.

**Denoise**

Press ▲▼ to select Denoise and "Confirm" to choose.

**Screen**

Press ▲▼ to select Screen and "Confirm" to set.

**Sound Menu****Sound Mode**

Press ▲▼ to select Sound Mode and "Confirm" to adjust.

**120Hz**

Press ▲▼ to select 120Hz and "Confirm" to choose.

**500Hz**

Press ▲▼ to select 500Hz and "Confirm" to choose.

**1.5KHz**

Press ▲▼ to select 1.5KHz and "Confirm" to choose.

**5KHz**

Press ▲▼ to select 5KHz and "Confirm" to choose.

**10KHz**

Press ▲▼ to select 10KHz and "Confirm" to choose.

**Balance**

Press ▲▼ to select Balance and "Confirm" to adjust.

**Auto Volume**

Press ▲▼ to select Auto Volume and "Confirm" to adjust.

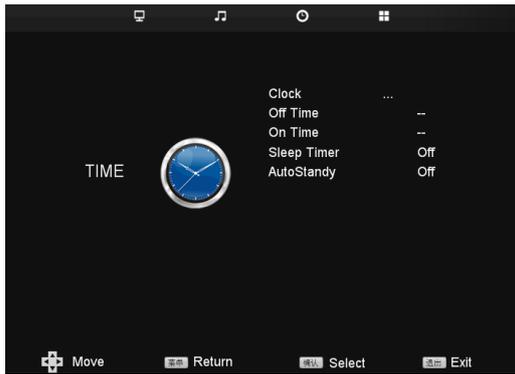
**Surround Sound**

Press ▲▼ to select Surround Sound and "Confirm" to adjust.

**Fiber Optic Mode**

Press ▲▼ to select Fiber Optic Mode and "Confirm" to adjust.

### Time Menu



#### Time

Press ▲▼ to select Time and "Confirm" to set.

#### Power Off Time

Press ▲▼ to select Power Off Time and "Confirm" to set.

#### Power On Time

Press ▲▼ to select Power On Time and "Confirm" to set.

#### Dormancy

Press ▲▼ to select Dormancy and "Confirm" to set.

#### Auto Standby

Press ▲▼ to select Auto Standby and "Confirm" to set.

### Option Menu



#### OSD language

Press ▲▼ to select Menu Language and "Confirm" to set.

#### Power Saving Mode

Press ▲▼ to select Power Saving Mode and "Confirm" to set.

#### RSS

Press ▲▼ to select RSS and "Confirm" to set.

#### Blue Screen

Press ▲▼ to select Blue Screen and "Confirm" to set.

## USB Mode

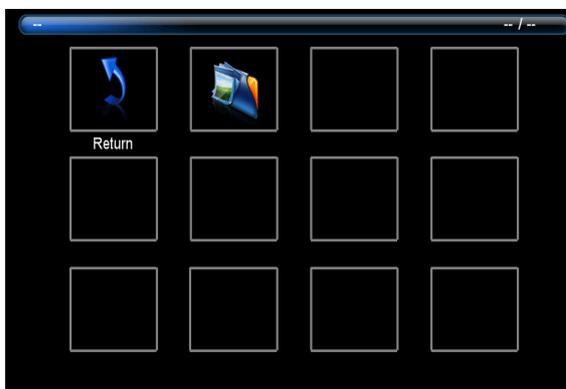


Press "Menu" and you can see image, music, movie and text. Press ▲▼ or ◀▶ to choose submenu and adjust the value. Press ▲▼ or ◀▶ to choose the desired menu from the submenu(brightness display).

### Image Display



Select C:\, click "Confirm" to enter submenu.

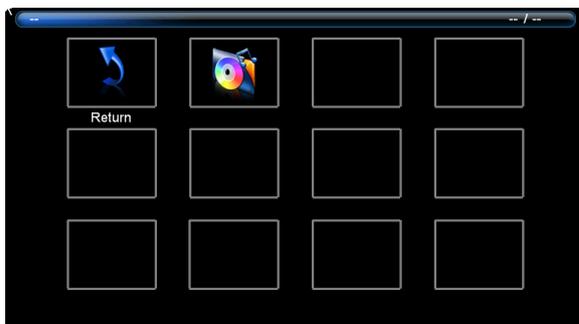


1. Insert the USB cable into the USB port.
2. Press ◀▶ to select image and "Confirm" to enter submenu.
3. Select C:\ and "Confirm" to enter submenu.
4. Select the image you want to display and press "▶||" to play. Press "◀◀" to play previous one and "▶▶" to next one.
5. Press "Exit" to quit.

### Play Music



Select C:\ and "Confirm" to enter submenu.

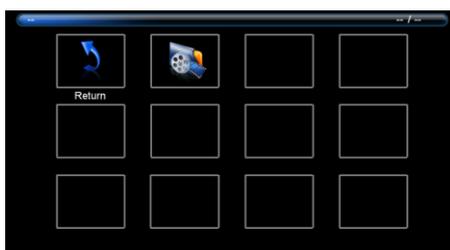


1. Insert the USB cable into the USB port.
2. Press ◀▶ to select music and "Confirm" to enter submenu.
3. Select C:\ and "Confirm" to enter submenu.
4. Select the music you want to play and press "▶||" to play. Press "◀◀" to play previous one and "▶▶" to next one.
5. Press "Exit" to quit.

### Play Movie



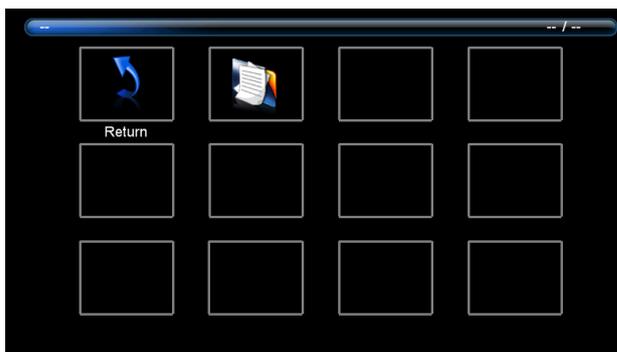
Select C:\ and "Confirm" to enter submenu.



1. Insert the USB cable into the USB port.
2. Press ◀▶ to select movie and "Confirm" to enter submenu.
3. Select C:\ and "Confirm" to enter submenu.
4. Select the movie you want to play and press "▶||" to play. Press "◀◀" to play previous one and "▶▶" to next one.
5. Press "Exit" to quit.

**Text Display**

Select C:\ and "Confirm" to enter submenu.



1. Insert the USB cable into the USB port.
2. Press ◀▶ to select text and "Confirm" to enter submenu.
3. Select C:\ and "Confirm" to enter submenu.
4. Select the text you want to display and press ▶|| to play. Press ◀◀ to play previous one and ▶▶ to next one.
5. Press "Exit" to quit.

## \*3D Function Introduction

Note: \* means the specific function of the specific model. Confirm with the seller if the product you purchased include this function or not.

This product requires Polarization 3D glasses to enjoy the 3D programs.

This product might be not compatible to some 3D glasses and you are suggested to use the recommended ones by the manufacturer.

### Read carefully the following suggestions and cautions before using the 3D glasses.

- Children under 6 years old should try not to watch 3D video.
- A long-time watching 3D video might cause eye fatigue. You are suggested not to watch 3D video continuously more than one hour and should have a five-minute intermission halfway through it.

## 3D Technical Specifications

Passageway	3D Type	Description	Resolution Ratio
HDMI (DVI) VGA	Side By Side	Show two side by side overlapped images	EIA: 1280*720P50/60 1920*1080I50/60 1920*1080P24/30/50/60 VESA:1920*1080@60 1366*768@60
	Top and Bottom	Show two top and bottom overlapped images	1280*768@60
	Frame Packing	Real high definition images	1920*2205@24
Multi-media	Side By Side	Show two side by side overlapped images	Support video formats
	Top and Bottom	Show two top and bottom overlapped images	Support video formats
All passageways	2D→3D	Simple 3D conversion mode	All passageway video signals

### Start 3D



### 3D Mode

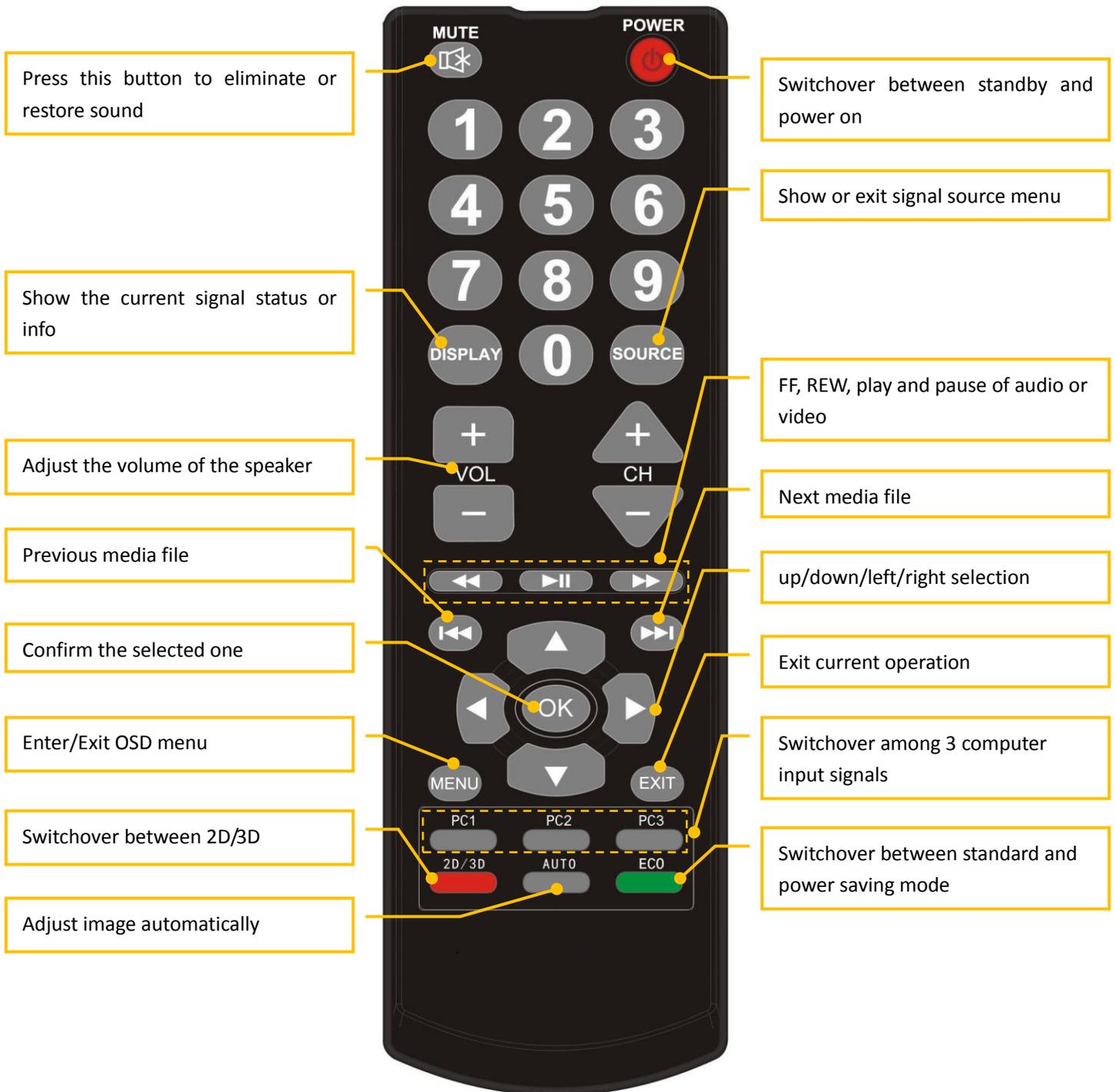
Press "Menu" to set.

Press ▲▼ to select 3D Mode and "Confirm" to set.

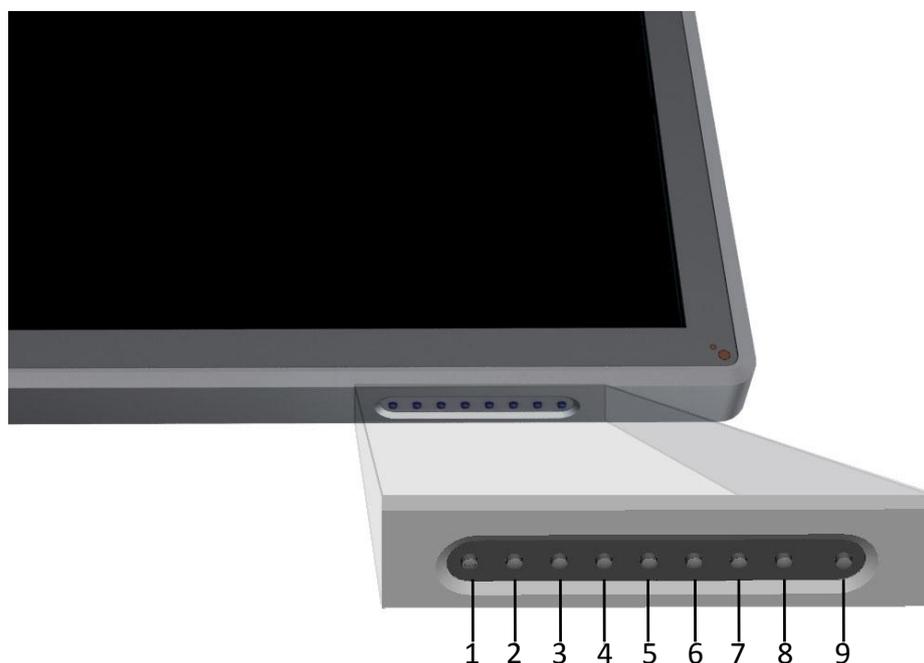
### 3D Set

\*When 3D Mode is in "ON" status, press ▲▼ to select 3D set and "Confirm" to set.

# Remote Control Functions

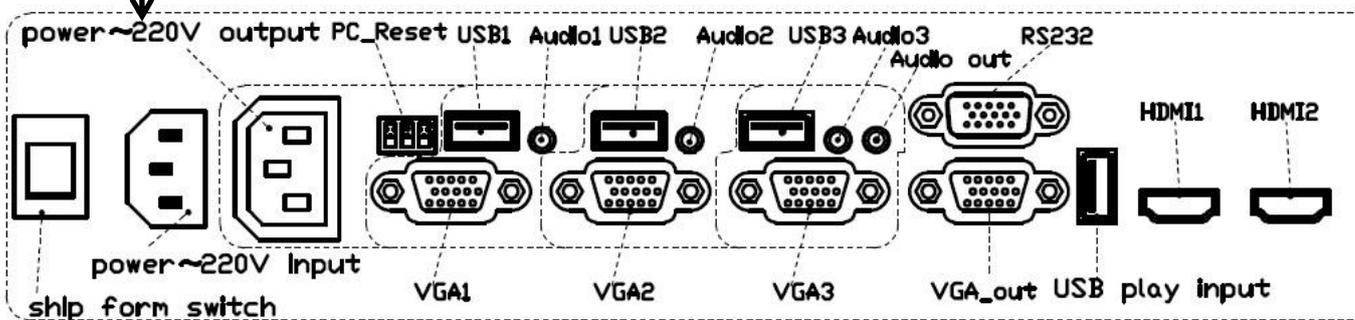
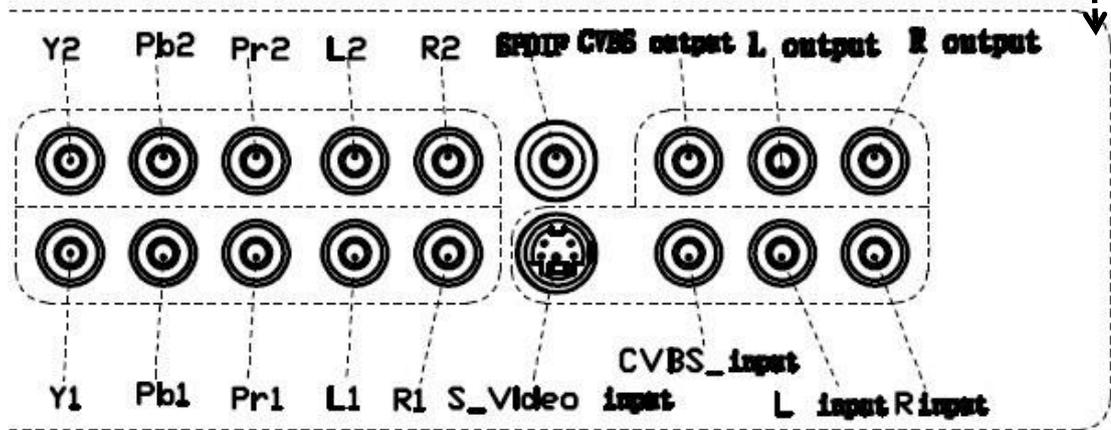
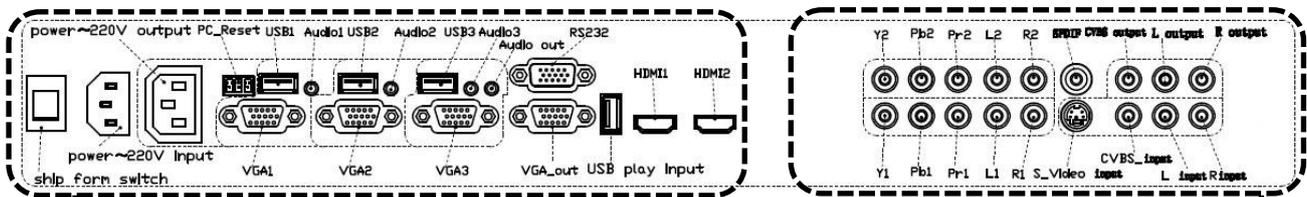


## Control Panel



1. On/Off: standby on and off
2. Menu: enter/exit OSD menu
3. Channel +:  
OSD status: direction selection ▲
4. Channel -:  
OSD status: direction selection ▼
5. Volume +: increase volume  
OSD status: direction selection ►
6. Volume -: decrease volume  
OSD status: direction selection ◀
7. Signal source: show or exit signal source menu
8. Power saving: enter power saving mode
9. Computer: Power on/off the computer(only applicable to the model with built in PC)

# Interface Panel



## PC Mode(VGA Input) specifications

Index	Standard	Resolution Ratio	Refresh Tate (Hz)	Horizontal Frequency (Khz)	Vertical Frequency (Hz)	Horizontal/ Vertical Sync Polarity (TTL)
1	VESA	640X480	60	31.5	60	N/N
2	VESA	640X480	72	37.9	72	N/N
3	VESA	640X480	75	37.5	75	N/N
4	VESA	800X600	56	35.1	56	P/P
5	VESA	800X600	60	37.9	60	P/P
6	VESA	800X600	72	48.1	72	P/P
7	VESA	800X600	75	46.9	75	P/P
8	VESA	1024X768	60	48.4	60	N/N
9	VESA	1024X768	70	56.5	70	N/N
10	VESA	1024X768	75	60	75	N/N
11	VESA	1280X960	60	60	60	N/N
12	VESA	1280X960	75	75.159	75	N/N
13	VESA	1280X1024	60	64	60	P/P
14	VESA	1280X1024	75	80	75	P/P
15	VESA	1600X1200	60	75	60	P/P
16	VESA	1920X1080	60	66.547	59.988	P/P

## Supporting Formats for USB Mode

Multi-media Type	File Format	File Extension
Image	JPEG、BMP、PNG	.jpg、.bmp、.png
Movie	MPEG1、MPEG2、MPEG4、H264、RM、RMVB、MOV、MJPEG、VC1、Divx、FLV	.avi、.mpg、.dat、.vob、.div、.mov、.mkv、.rm、.rmvb、.mp4、.mjpeg、.ts、.trp、.wmv、.asf
Music	WMA、MP3、M4A、(AAC)	.wma、.mp3、.m4a
Text	TXT	.txt

## Trouble-shooting

Symptoms	Presumable Causes	Solutions
Service program can not be connected	The drive is not correctly installed.	Install the drive correctly.
	The USB port (cable) is not connected or working.	Change a new USB cable to test or check if the USB port is good or not.
	The IR lights are blocked.	Make sure there is no obstacles blocking the IR light covers.
The device requires recalibration every time it powers on.	The computer is installed with recovery protection card.	Turn off the computer protection program and recalibrate the service program.
Incorrect calibration of service program	Incorrect calibration.	Full screen the image with the Auto button in the remote control. Then calibrate with the writing screen pen.
There is a shake or leap of the handwriting during writing.	Incorrect writing.	Write with the writing screen pen and hold the place of the pen away from the pen tip as far as possible. The angle between the pen and the screen should be large than 60degrees (the sleeves or wrist should not be closed to the screen).
	Strong light source or IR source interferences.	Remove the interferences or move to a place without interferences.
There is a break of the handwriting during writing(part of the handwriting can be shown normally)	Incorrect writing.	Write with the writing screen pen and hold the place of the pen away from the pen tip as far as possible. The angle between the pen and the screen should be large than 60degrees (the sleeves or wrist should not be closed to the screen).
	The covered place is not big enough as required during writing or the pen tip is too tapering.	Change the pen tip or use a writing pen with bigger pen tip.
	The IR lights are blocked.	Check if there is any obstacles on the IR light covers.
	Strong light source or IR source interferences.	Remove the interferences or move to a place without interferences.
Can not write	The handwriting color is same with or similar to the background color.	Use the pen with other colors.
	The hands or other objects are on the screen during	Write with the writing screen pen and hold the place of the pen away from the pen tip as far as possible. The angle between the pen and the screen should be large than

		60degrees (the sleeves or wrist should not be closed to the screen).
	Strong light source or IR source interferences.	Remove the interferences or move to a place without interferences.
	Incorrect writing.	Write with the writing screen pen and hold the place of the pen away from the pen tip as far as possible. The angle between the pen and the screen should be large than 60degrees (the sleeves or wrist should not be closed to the screen).
No sound or image	<ol style="list-style-type: none"> <li>1. Check if the power cable is connected to the power socket and powered.</li> <li>2. Check if the ship form switch is turned on.</li> <li>3. Check if the standby is enabled</li> <li>4. Check if the cables of video and audio input are working .</li> <li>5. Check if the device has the correct signal source input.</li> <li>6. Check the setting of image brightness and contrast ratio, etc.</li> <li>7. Check the volume.</li> </ol>	
Image works but no sound	<ol style="list-style-type: none"> <li>1. Check the volume.</li> <li>2. Check if the Mute button on the remote control is activated.</li> <li>3. Check if the audio connection between the computer and touch LCD display is correct.</li> </ol>	
No image or image is black and white	<ol style="list-style-type: none"> <li>1. Adjust the color setting.</li> <li>2. Check the color system.</li> </ol>	
No image or the sound is interfered	<ol style="list-style-type: none"> <li>1. Find out the interference devices around the touch LCD display and move it away.</li> <li>2. Do not use the same power socket with the interference device.</li> </ol>	
The remote control is not working.	<ol style="list-style-type: none"> <li>1. Change the battery.</li> <li>2. Clean the emitting port on the top of the remote control ( covered or not)</li> <li>3. Check the battery's contact point ( working or not).</li> </ol>	
Computer can not be turned on (only for the model with computer inside)	<ol style="list-style-type: none"> <li>1. Check if the power adapter connection working or not and the device is powered or not.</li> <li>2. Check if the connection between the computer and touch LCD display correct or not.</li> </ol>	

## Specifications and Parameters

<b>Main Parameters</b>	
Display Proportion	16: 9
Physical Resolution	1920*1080Pixel
Color Clearation	10bit, 1.07B
Contrast Ratio	4000:1
Response Time	5.5ms
Image System/Sound System	PAL/DK, I
Speaker Power	10Wx2
Operating Voltage	AC 100-240V, 50/60Hz
<b>Touch</b>	
Induction Method	IR multi-point touch induction
Communication Interface	USB HID free drive
Touch Resolution Ratio	4096*4096
Scan、Cursor Speed	8ms、120 点/sec
Calibration Accuracy	1mm
Transmission Distance	10m
<b>Transportation/Storage</b>	
Storage Temperature	-20℃~60℃
Working Temperature	0℃-50℃
Installation Method	hanging/stand

## Serial Control

Connect the RS232 port with the computer or central control device. Turn on the RS232 serial connection and set as follow:

Port:COM1(set according to the port of the computer or central control device)			
Bit rate:	19200	Parity check:	NON
Data bit:	8	Stop bit:	1

Button control codes are as follow and the button functions are the same as the remote control:

Power On	99 A2 B3 C4 02 ff 01 00	Power Off	99 A2 B3 C4 02 ff 01 01
V-:	99 A2 B3 C4 02 ff 01 0C	V+:	99 A2 B3 C4 02 ff 01 0D
MUTE:	99 A2 B3 C4 02 ff 01 02	P-:	99 A2 B3 C4 02 ff 01 0E
TV:	99 A2 B3 C4 02 ff 01 03	P+:	99 A2 B3 C4 02 ff 01 0F
PC:	99 A2 B3 C4 02 ff 01 04	→:	99 A2 B3 C4 02 ff 01 10
AV:	99 A2 B3 C4 02 ff 01 06	←:	99 A2 B3 C4 02 ff 01 11
HDMI1:	99 A2 B3 C4 02 ff 01 07	↑:	99 A2 B3 C4 02 ff 01 12
OK:	99 A2 B3 C4 02 ff 01 08	↓:	99 A2 B3 C4 02 ff 01 13
Multi-media :	99 A2 B3 C4 02 ff 01 09	MENU:	99 A2 B3 C4 02 ff 01 14
STILL :	99 A2 B3 C4 02 ff 01 0A	AUTO:	99 A2 B3 C4 02 ff 01 15
INPUT:	99 A2 B3 C4 02 ff 01 0B	S_VIDEO:	99 A2 B3 C4 02 ff 01 16
EXIT:	99 A2 B3 C4 02 ff 01 05	YPbPr:	99 A2 B3 C4 02 ff 01 17
1:	99 A2 B3 C4 02 ff 01 18	2:	99 A2 B3 C4 02 ff 01 19
3:	99 A2 B3 C4 02 ff 01 1A	4:	99 A2 B3 C4 02 ff 01 1B
5:	99 A2 B3 C4 02 ff 01 1C	6:	99 A2 B3 C4 02 ff 01 1D
7:	99 A2 B3 C4 02 ff 01 1E	8:	99 A2 B3 C4 02 ff 01 1F
9:	99 A2 B3 C4 02 ff 01 20	0:	99 A2 B3 C4 02 ff 01 21

RS232 connection diagram

