VTE-8400 Super-slim LED Display

Model VTE-8400 Installation/Operation Manual

COPYRIGHT AND TRADEMARKS:

Important Safety Instructions

Thank you for your purchase of this VIVIDtouch Interactive Display. To ensure the best possible viewer experience, please read this manual carefully as it is your guide through the menus and operation.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarised or grounding type plug. A polarised plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for the replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
11. If an extension cord must be used, ensure that the voltage rating exceeds the maximum power consumption of the apparatus; otherwise, the extension cord may overheat.
12. Only use the attachments/ accessories specified by the manufacturer.
13. Use only with a cart, stand, bracket specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus to avoid injury from tip-over.

14. Disconnect all cables form the apparatus before moving it.
15. Unplug this apparatus during lightning storms or when unused for long periods of time.
16. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
17. Keep the packing material in case the equipment should ever need to be shipped.

Compliance Information

DECLARATION OF CONFORMITY:

VIVIDtouch hereby declares that the Product's Model Number:

VTE-8400

Conforms with the provisions of:

- FCC: FCC CFR Title 47 Part 15 Subpart B Class A, CISPR 22:2008
- ICES-003 Issue 5: 2012 Class A (For Canada)
- CE: EN 55022: 2010 + AC: 2011
- EN 55024: 2010
- EN 61000-3-2: 2006 + A2: 2009
- EN 61000-3-3: 2008
- cTUVus: UL 60950-1:2007
- CB: IEC 60950-1: 2005 + A1

FCC PART 15:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

INDUSTRY CANADA (ICES-003):

CAN ICES-3 (A)/NMB-3(A)

PRODUCT DISPOSAL:

The Product contains small amounts of tin, lead and / or mercury. Disposal of these materials maybe regulated due to environmental considerations.

DISPOSAL OF OLD ELECTRICAL AND ELECTRONIC EQUIPMENT (Applicable throughout the European Union and other European countries with separate collection programs)

This symbol found on your product or on its packaging, indicates that this product should not be treated as household waste when you wish to dispose of it. Instead, it should be handed over to an applicable collection point for the recycling of electric al and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate disposal of this product.

The recycling of materials will help to conserve natural resources. This symbol is only valid in the European Union. If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

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1. Introduction

About This Manual

This Owner's Manual describes how to install, set up and operate the VIVIDtouch Series LED Display.

Throughout this manual, the VIVIDtouch Series LED Display is referred to as the "display"

Target Audience

The manufacturer has prepared this manual to help installers and end users get the most out of the display.

The manufacturer has made every effort to ensure that this manual is accurate as of the date it was printed. However, because of ongoing product improvements and customer feedback, it may require updating from time to time.

Textual and Graphic Conventions

Text Conventions: The following conventions are used in this manual, in order to clarify the information and instructions provided:

- Remote and built-in keypad button identifiers are set in upper-case bold type; for example, "Press EXIT to return to the previous menu."
- Computer input (commands you type) and output (responses that appear on-scree n) is shown in monospace (fixed-width) type; for example: "To change the aspect ratio to Letterbox, type 07 00 02 41 53 50 03 08 <Enter>."
- All keys with functional names are initial-capped, set in bold type and enclosed in angle brackets. These keys are the following: <Enter>, <Spacebar>, <Control>, <Esc> and <Tab>. <Enter> indicates that you may press either the RETURN or ENTER key on your keyboard if it has both keys.
- In addition to these conventions, underlining, boldface and / or italics are occasionally used to highlight important information, as in this example:

NOTE *A carriage return must be used after each command or string.*

Graphic Conventions: These symbols appear in numerous places throughout the manual, to emphasise points that you must keep in mind to avoid problems with your equipment or injury:

TIP

TIPS highlight time saving short cuts and helpful guidelines for using certain features.

NOTE

NOTES emphasise text with unusual importance or special significance. They also provide supplemental information.

CAUTION

CAUTIONS alert users that a given action or omitted action can degrade performance or cause a malfunction.

WARNING

WARNINGS appear when a given action or omitted action can result in damage to the equipment, or possible non-fatal injury to the user.

DANGER!

DANGER appears when a given action can cause severe injury or death.

Using This Manual

Use the following table to locate the specific information you need in this manual.

If you need...	... Turn to page:
General information about the VIVIDtouch Series LED Display	13
Installation instructions	21
First-time configuration instructions	31
Advanced configuration instructions	44
Troubleshooting tips	48
Product specifications	60

Description, Features and Benefits

The VIVIDtouch Series LED Display represents the cutting edge of direct-view LCD technology.

They combine ultra-high resolution and unparalleled image quality with configurable I/O in a large-format display for a wide range of digital signage and control-room applications.

Key Features and Benefits

The display offers these key features and benefits:

- Up to 3840 x 2160 @ 60 Hz resolution (16:9 Native Aspect Ratio)
- Ultra-wide 178-degree Viewing Angle
- (4) HDMI v1.4 inputs and DisplayPort 1.2 input with High-bandwidth Digital Content Protection (HDCP), VGA, RS-232, (2) Touch USB and LAN connection
- Displays up to 4 video sources simultaneously
- Edge LED backlight with active ambient light sensor to adjust backlight automatically
- Full range internal speakers
- Signal source auto detection
- Landscape support
- Selectable OSD keypad lock

Touch Capability:

- Precise, highly-responsive touch technology
- High touch sensitivity – no pressure required
- Any touch: finger, gloved hand or pointer
- Calibrated easily by software tools as attached
- Windows 7/8, MAC and Linux compliant
- One USB cable for easy Plug-and-Play operation

Parts List

Your display is shipped with the following items. If any items are missing or damaged, please contact your dealer or Customer Service.

- VIVIDtouch Series LED Display
- Remote Control Unit and batteries
- AC Power Cord
- Touch Stylus
- Pen Tray
- IR Extender Cable
- USB Cable

- VGA Cable
- HDMI Cable
- Quick Start Guide
- USB Key – Multi-Touch Drivers & User Manual

Notes

2. Controls and Functions

Display at a Glance

Figure 2-1 shows the key display components, and the paragraphs that follow describe them.

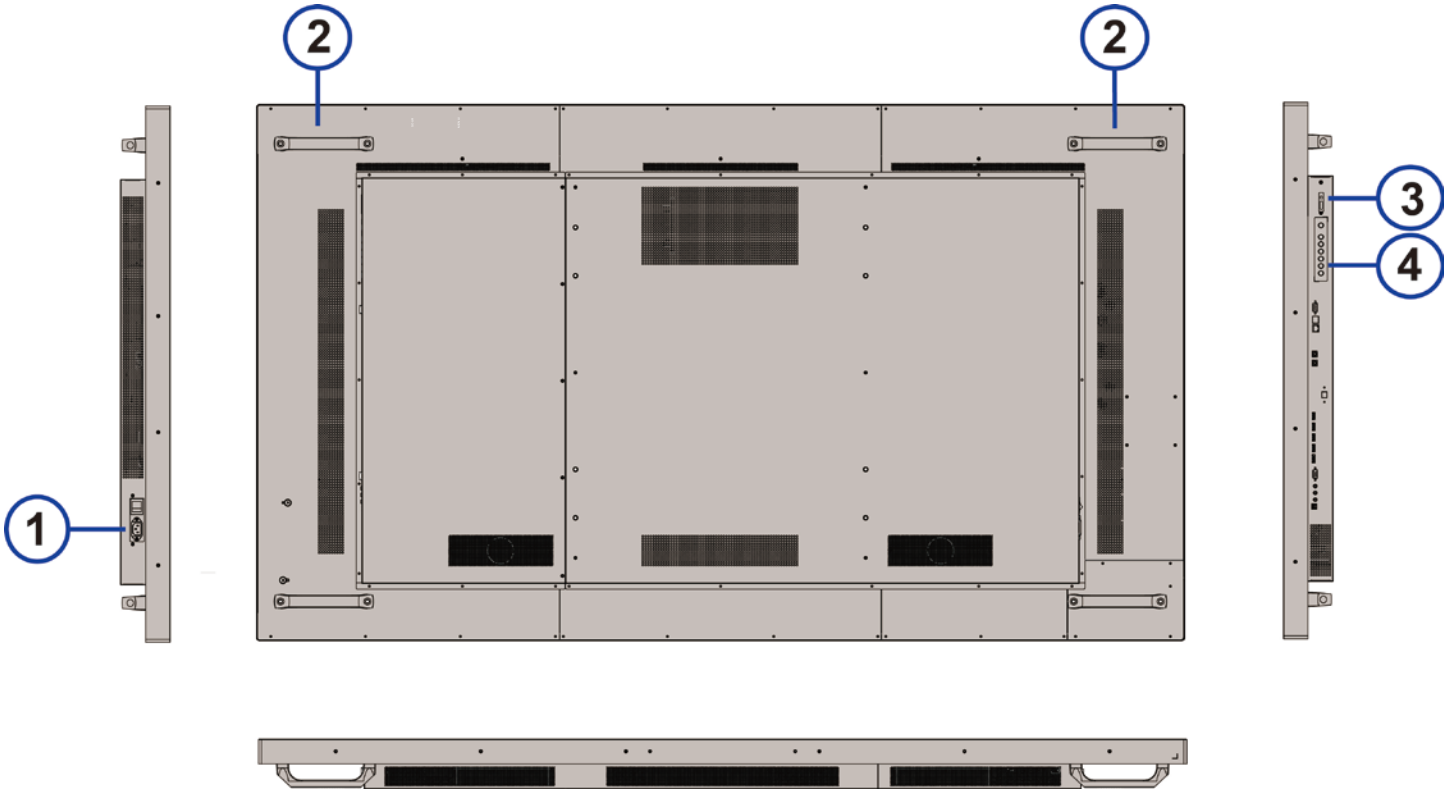


Figure 2-1. Display Rear/Side View

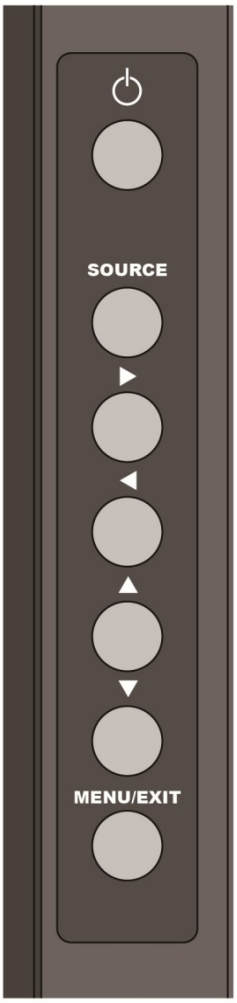
1. **MAIN POWER SWITCH**
   Connects or disconnects the display panel from the AC power source.

2. **HANDLE**
   Always use the handles when carrying the display. DO NOT touch or hold the screen face.

3. **STATUS LED**

   - Solid orange: display in standby mode
   - Blinking orange: display on, no input detected
   - Off: main power switch off
   - Solid green: display on, input detected

4. **KEYPAD**



You can use the keypad instead of the remote control unit to operate the on-screen display (OSD) controls. The keypad operates as follows:

On/Standby (⏻)

Press once to toggle from standby mode to on mode. Press it again to return to standby mode.

SOURCE

To select a source, press the **SOURCE** button repeatedly (with no menus visible on-screen).

▶

When a menu is visible on-screen, this button operates identically to the right-arrow (or ENTER) button on the display remote control unit.

◀

When a menu is visible on-screen, this button operates identically to the left-arrow button on display remote control unit.

▲ / ▼

When a menu is visible on-screen, these buttons operate identically to the up-and down-arrow buttons on the display remote control unit.

MENU/EXIT

Press this button to access the on-screen display (OSD) controls, or to exit the current menu and return to the previous one.

Input Panel

Figure 2-2 shows the display input panel.

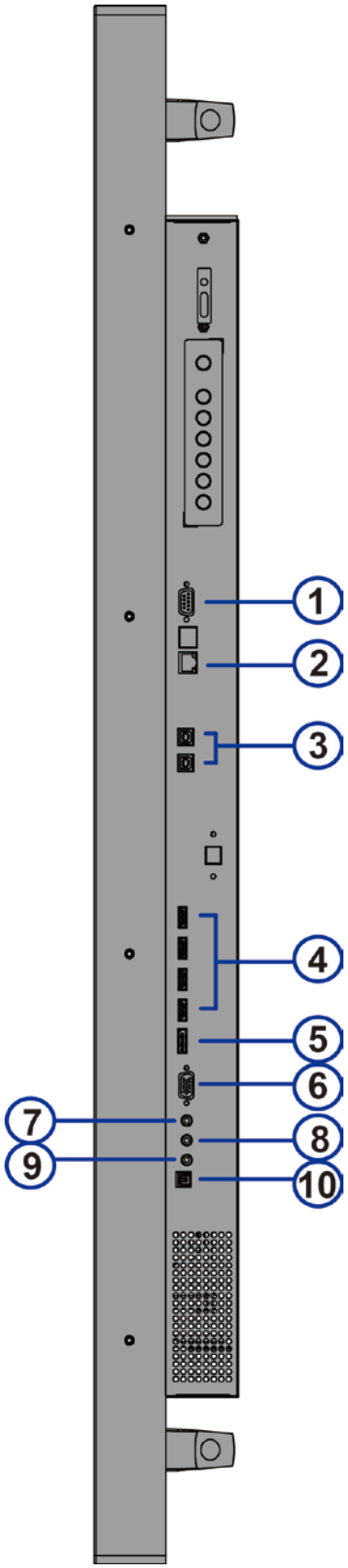


Figure 2-2. Display Input Panel Side View

1. **RS232C In**
   A female, 9-pin D-sub connector for interfacing with a PC or control system.

2. **LAN Port**
   An RJ-45 connector for interfacing with a PC or home theater automation/control system via a Cat 5 cable.

3. **Touch USB 1, 2**
   Touch USB 1: A standard, Type B USB port for connecting the HDMI and VGA input sources to the display.
   Touch USB 2: A standard, Type B USB port for connecting the DisplayPort input sources to the display.

4. **HDMI 1, 2, 3, 4**
   HDCP-compliant digital video inputs for connecting HDMI sources.

5. **DisplayPort**
   DisplayPort 1.1a and DisplayPort-HDCP 1.1 compliant, SD/HD input for connecting SDTV, EDTV or HDTV component video sources.

6. **VGA In** (15-pin D-Sub)
   Connects components that have RGB or component output jacks, such as a personal computer or external DTV decoder (a break-out cable is needed for BNC-type connection).

7. **PC Audio In**
   Connects the audio output from a personal computer here.

8. **IR Extender**
   Connects the IR Extender cable provided with the display to this input.

9. **Audio Out**
   Connects external, powered speakers or an external audio receiver/ amplifier.

10. **SPDIF Out**
    Connects external, powered digital speakers or audio receiver/amplifier.

Remote Control Unit

Figure 2-3 shows the display remote control, and Table 2-1 describes its functionality.

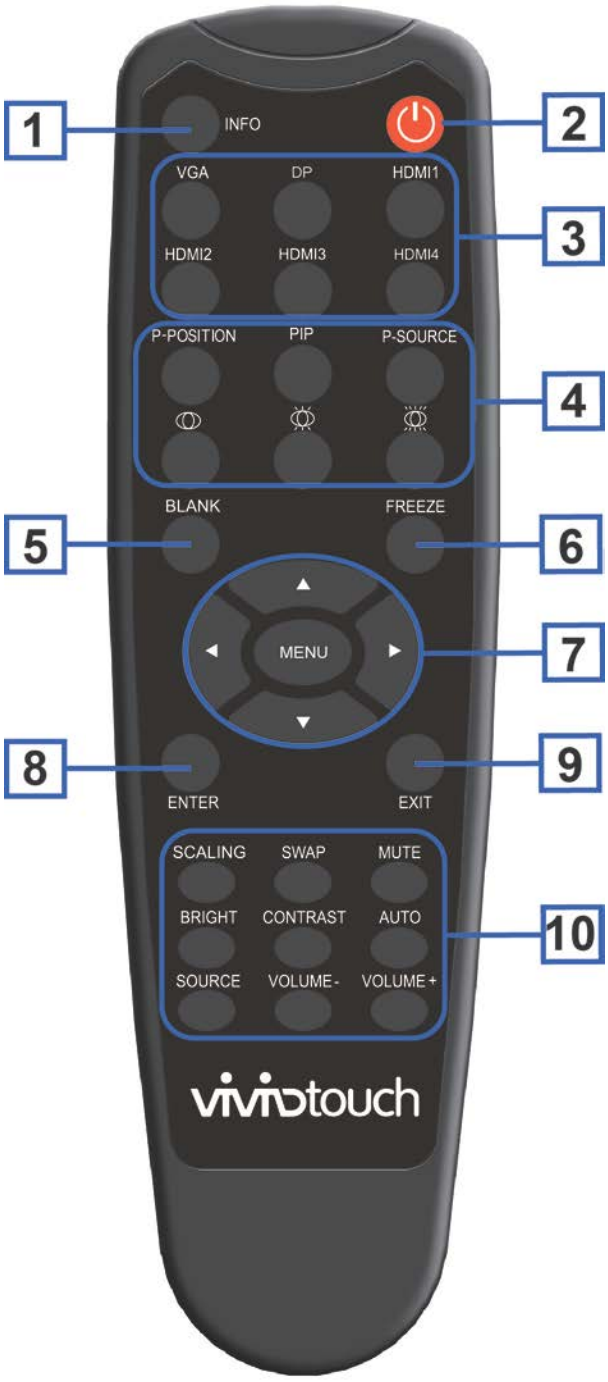


Figure 2-3. Display Remote Control Unit

Table 2-1. Remote Control Button Descriptions

	Label	Description
1	INFO	Provides source and resolution information
2	⏻	Turns the monitor on and off
3	VGA	Selects the PC RGB source
	DP	Selects the DisplayPort source
	HDMI 1, 2, 3, 4	Selects the HDMI source
4	P-POSITION	Selects the PIP position
	PIP	Turns the PIP feature on and off
	P-SOURCE	Selects the secondary sub-source
		Selects the low light setting
		Selects standard setting
		Selects high brightness setting
5	BLANK	Blanks the screen. Press any key to restore.
6	FREEZE	Freezes the screen. Press again to restore.
7	MENU ▶ ◀ ▲ ▼	Opens the monitor's on-screen menu system. When the menu system is already open, pressing this button will select the previous submenu Navigates through submenus and settings
8	ENTER	Selects highlighted menu choices
9	EXIT	Closes the menu system
10	SCALING	Selects each aspect ratio, in sequence: Full Screen, Native, Letter Box and Pillar Box
	SWAP	Swaps the main and PIP source
	MUTE	Turns off the sound
	BRIGHT	Adjusts the brightness
	CONTRAST	Adjusts the contrast
	AUTO	Auto adjustment of VGA source
	SOURCE	Selects each source, in sequence
	VOLUME -	Decreases the sound volume
	VOLUME +	Increases the sound volume

3. Installation

NOTE *Installation **must** be performed by a qualified custom video installation specialist.*

Remote Control

To install batteries in the remote control:

1. Press down the tab on the cover and pull the cover up.
2. Insert the included batteries. Ensure that the polarities correctly match the ⊕ and ⊖ markings inside the battery component.
3. Insert the lower tab of the cover into the opening, and press down the cover until it clicks in place.

Notes on Batteries

Make sure that the battery polarities are correct when installing the batteries.

- Do not mix an old battery with a new one or different types of batteries.
- If you will not use the remote control for a long time, remove the batteries to avoid damage from battery leakage.
- Do not expose batteries to excessive heat such as from sunshine, fire or the like.

Notes on Remote Control Operation

- Make sure that there is nothing obstructing the infrared beam between the remote control and the IR receiver on the display.
- If the effective range of the remote control decreases, or it stops working, replace the batteries with new ones.
- The remote control may fail to operate if the infrared remote sensor is exposed to bright sunlight or fluorescent lighting.
- Ambient conditions may possibly impede the operation of the remote control. If this happens, point the remote control at the display, and repeat the operation.

Locking and Unlocking the Remote Control & Keypad on Display

You can lock the remote control buttons to prevent unauthorised persons from changing settings on the display. To do this, press ENTER, ENTER, EXIT, EXIT, ENTER and EXIT, in sequence. To unlock a locked remote control unit, use the same sequence of button presses.

Quick Setup

Table 3-1 gives a quick overview of the display installation process. The sections following this one provide detailed instructions.

Table 3-1. Installation Overview

Step	Procedure	For Details, Refer to page...
1	Mount the display(s) on a wall (optional)	24
2	Connect other external equipment to the display (optional): Automation/control system (RS-232, Ethernet) External IR repeater	 25 27
3	Connect signal sources to the display	28
4	Apply power to the display	30
5	Change the OSD language (optional)	31
6	Perform touch screen-specific installation and configuration tasks (VIVIDtouch): Connect touch screen controller host computer to the display	 31
7	Display calibration: adjust the following *for each input*: • Aspect ratio • Brightness • Contrast • Colour temperature and white balance • Colour level • Tint • Input position	33

Installation Considerations

Proper installation of your display will ensure a satisfying viewing experience. Whether a display is installed temporarily or permanently, the following should be taken into account to ensure the best performance of the display.

Ambient Light

In general, minimise or eliminate light sources directed at the screen. Contrast ratio in your images will be noticeably reduced if light directly strikes the screen, such as when a shaft of light from a window or floodlight falls on the image. Images may then appear washed out and less vibrant. Direct sunlight may affect touch operation.

Ambient Heat

Keep the ambient temperature constant and below 35°C (95°F). Keep the display away from heating and / or air conditioning vents.

Ventilation

If you are mounting the display in an enclosure, leave sufficient space on all sides between it and surrounding objects, as shown in Figure 3-1. This allows heat to disperse, maintaining the proper operating temperature.

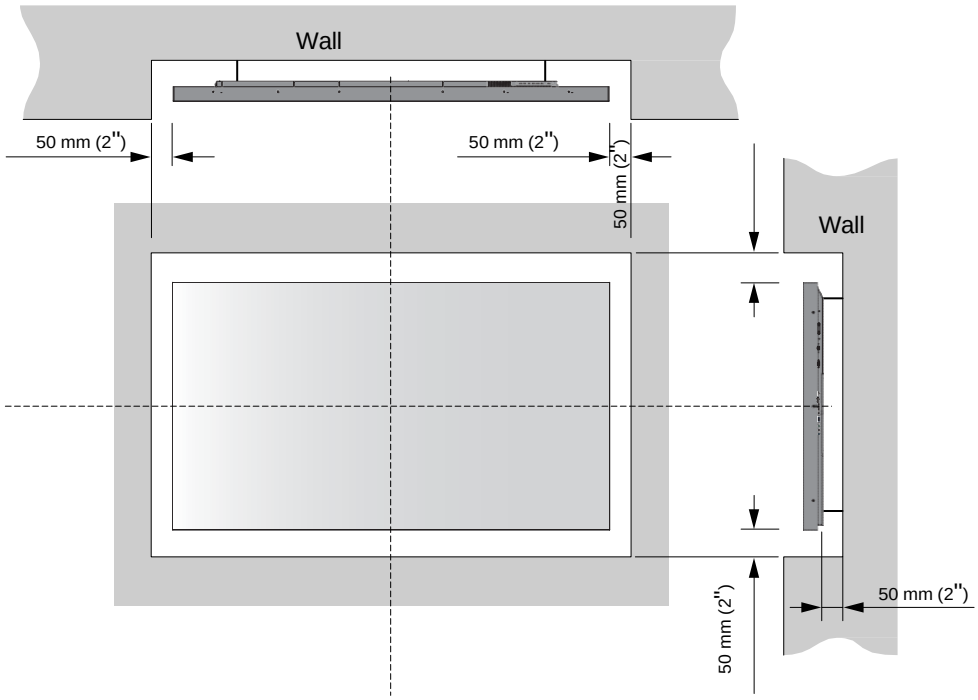


Figure 3-1. Ventilation Requirements for Enclosure Mounting

Mounting the Display

You can mount the display on a wall.

If you do decide to wall-mount the display, ensure that the wall-mount bracket is installed according to the instructions included with it. The wall must be capable of supporting a redundant weight factor three (3) times the weight of the display, or be reinforced.

We recommend that this be done by a custom installation specialist.

NOTE *Use only the approved wall-mount kit designed for your display.*

Connections to the Display

Proceed as follows to connect the display to your video sources, external controller(s) – if present – and AC power.

When connecting your equipment:

- Turn off all equipment before making any connections.
- Use the correct signal cables for each source.
- For best performance and to minimise cable clutter, use high-quality cables that are only as long as necessary to connect two devices. (Don't use a 7m cable when a 1.8m cable will suffice.)
- Ensure that the cables are securely connected. Tighten the thumbscrews on connectors that have them.

Connecting a Control System or PC:

RS232 Connection

Use a straight-through RS-232 cable with a 9-pin male connector to connect a PC or control system (if present) to the RS-232 port on the display; see **Figure 3-2**.

For more information about using this connection, refer to ***External Control*** on page 39.

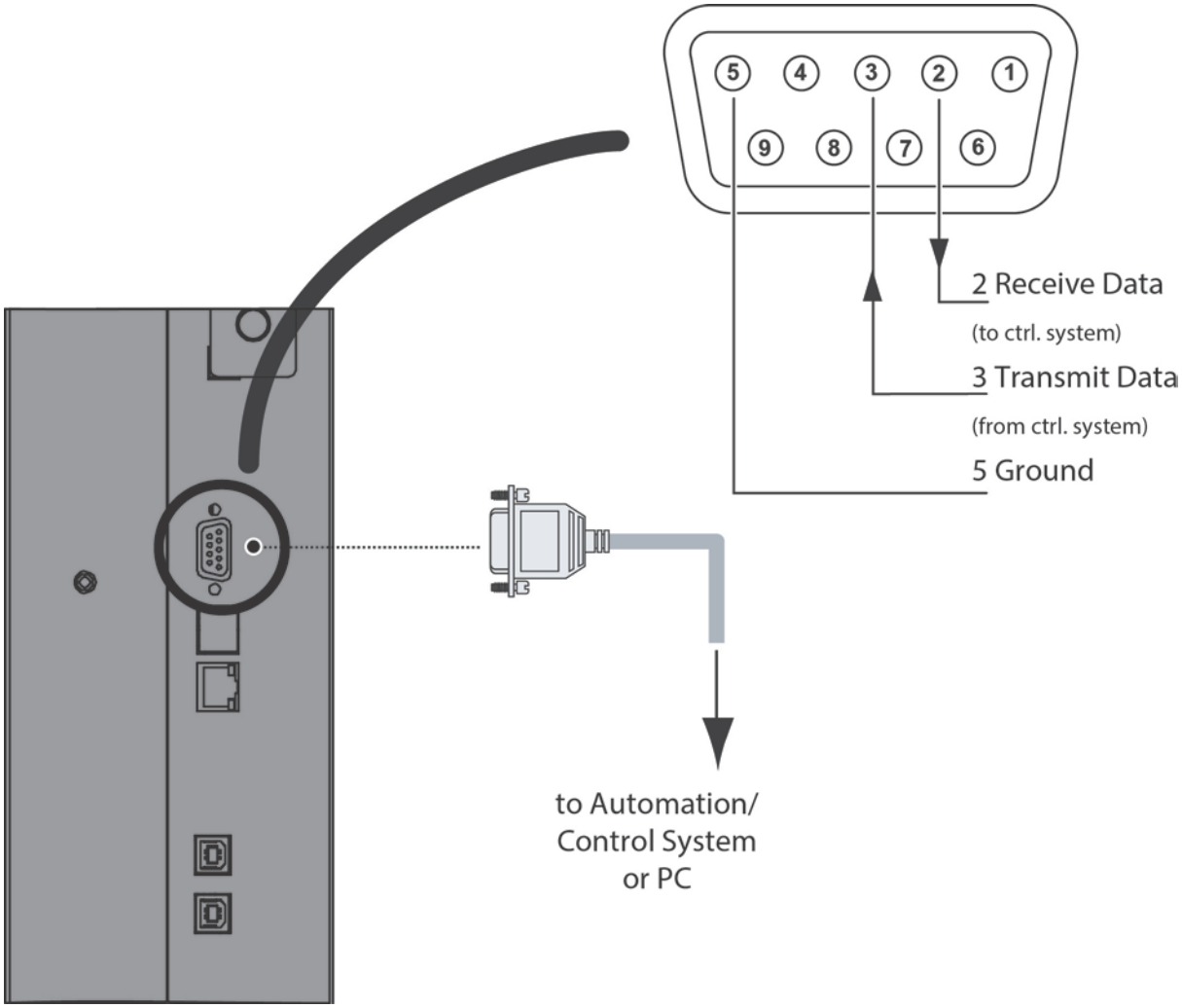


Figure 3-2. RS-232 Control System Connection

Ethernet Connection

Use a standard Ethernet cable with an RJ-45 male connector to connect a PC or control/automation system (if present) to the Ethernet port on the display.

For more information about using this connection, refer to ***External Control*** on page 39.

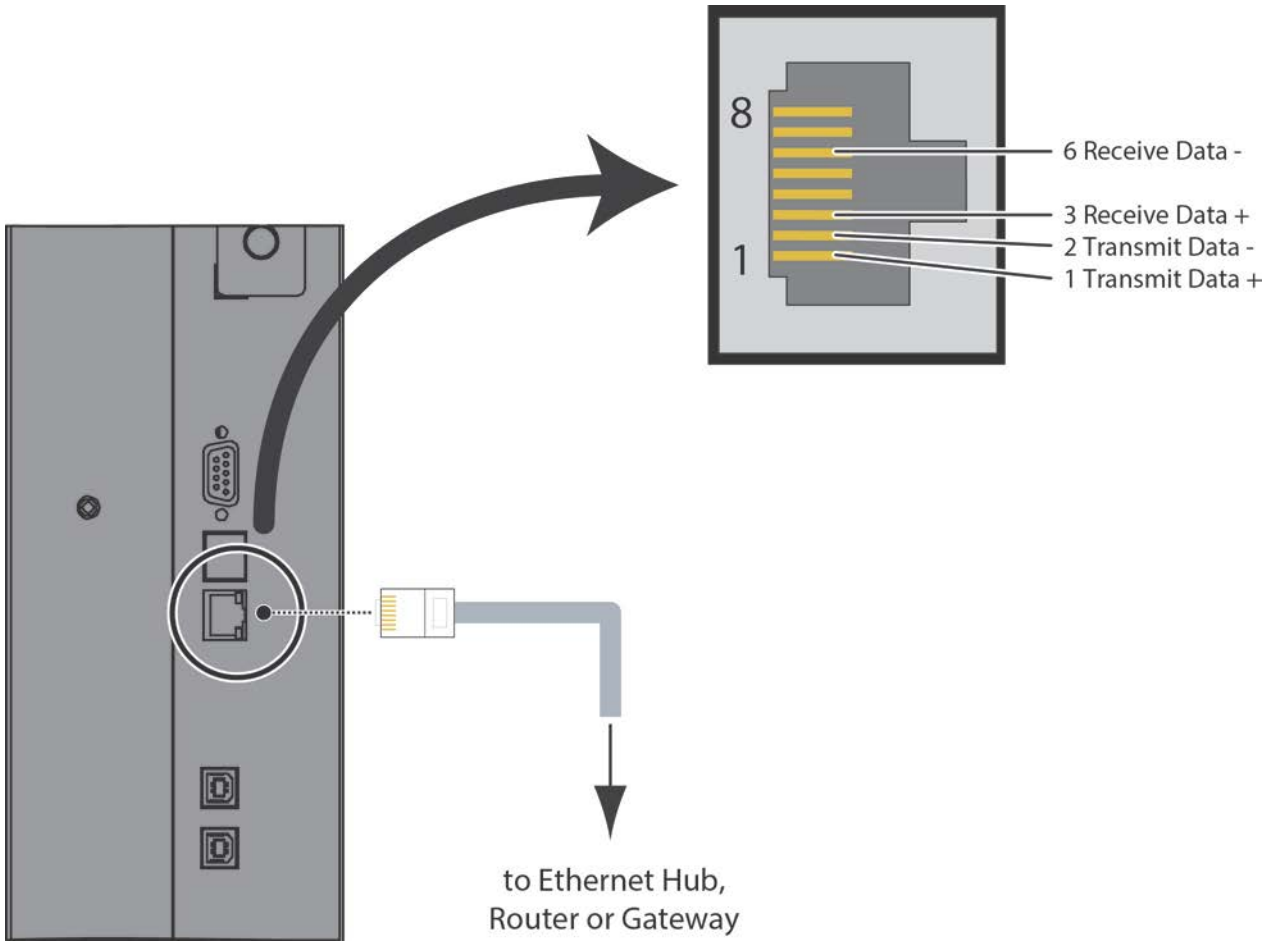


Figure 3-3. Ethernet Connection

IR Extender Connection:

Connect the provided IR extender cable to the IR Extender input as shown in Figure 3-4.

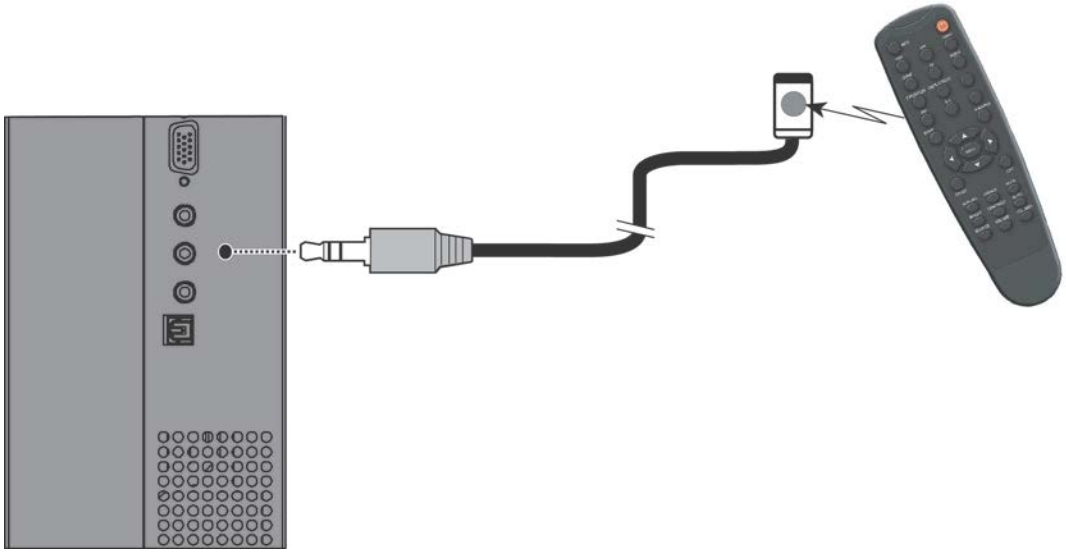


Figure 3-4. IR Extender Connection

Recommended IR Extender Positions for Cascading 84” Displays

In controlled testing, the IR range is approximately 1.5 metres directly on-axis, and about 1 metre at plus or minus 15 degrees off-axis using the IR extender.

Best performance is obtained in either position P1 or position P2.

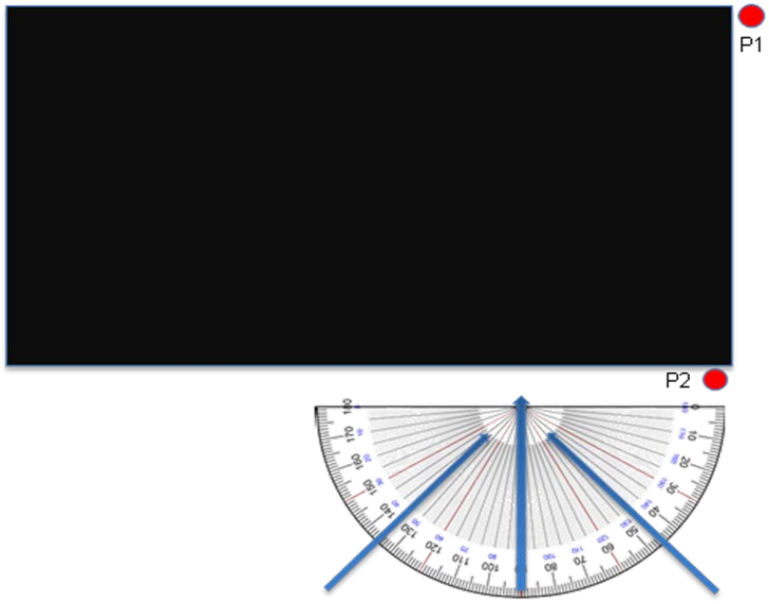


Figure 3-5. Recommended IR Extender Position

Connecting Source Components to the Display

Connect your video sources to the display as shown and described in the sections that follow.

DisplayPort Source Connection: See Figure 3-6.

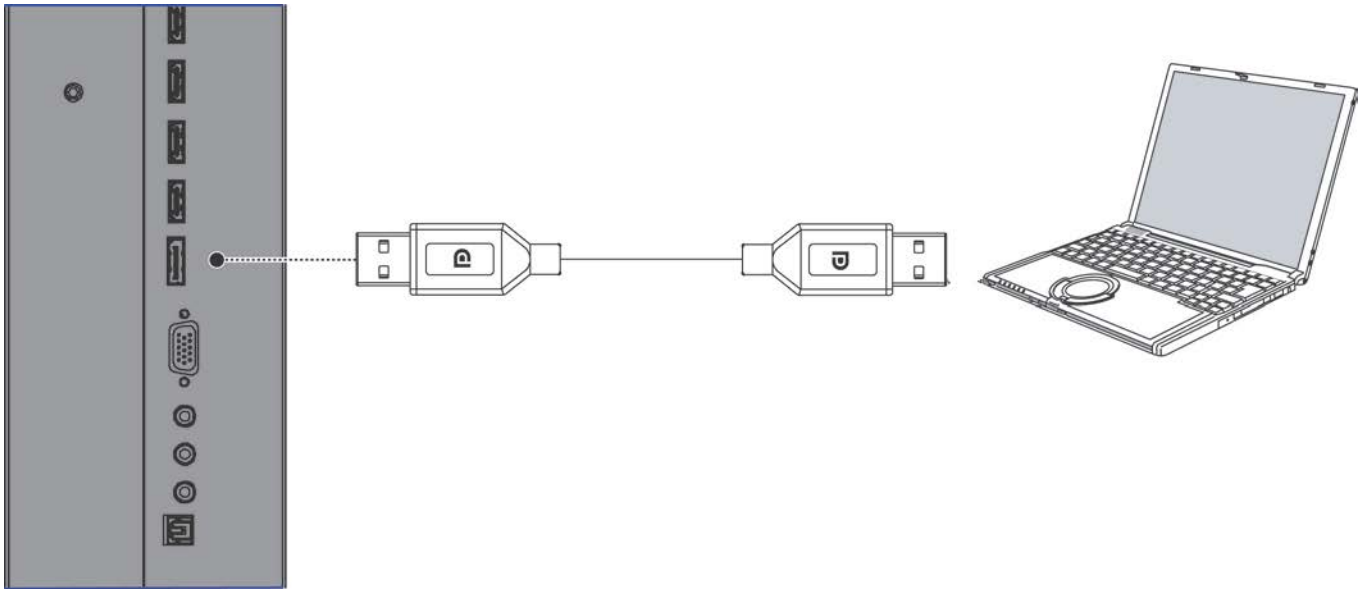


Figure 3-6. DisplayPort Source Connection

HDMI Source Connections: See Figure 3-7.

TIP Use the HDMI inputs whenever possible. This ensures the highest video quality because the signal is carried in the digital domain throughout the entire signal path, from source component output into the display.

NOTE This display supports the VESA Display Data Channel (DDC) standard. This standard provides “Plug and Play” capability; the display and a VESA DDC-compatible computer communicate their setting requirements, allowing for quick and easy setup.

In order for Plug and Play to work correctly, you must turn on the display before you turn on the connected computer.

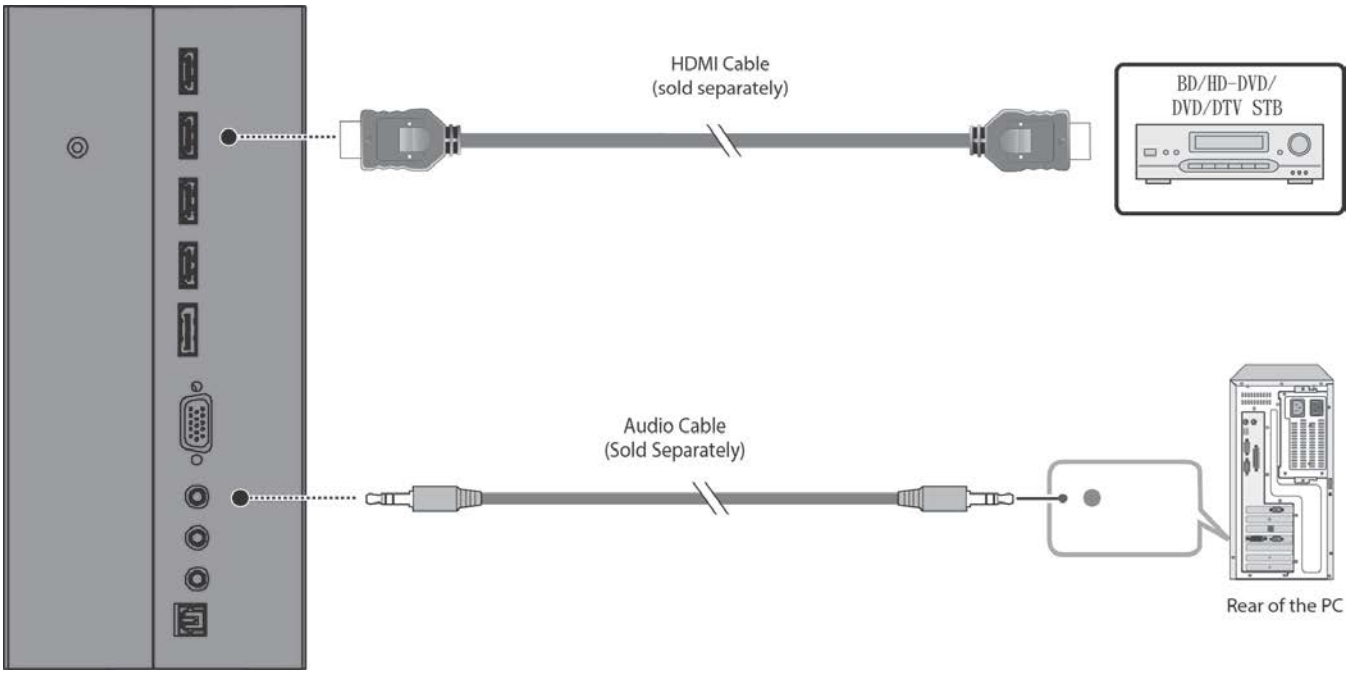


Figure 3-7. HDMI Source Connections

VGA Source Connection: Connect a personal computer or other RGB source to the VGA input as shown in Figure 3-8.

NOTE *Refer to **Supported Timings** on page 51 for a list of compatible input signals.*

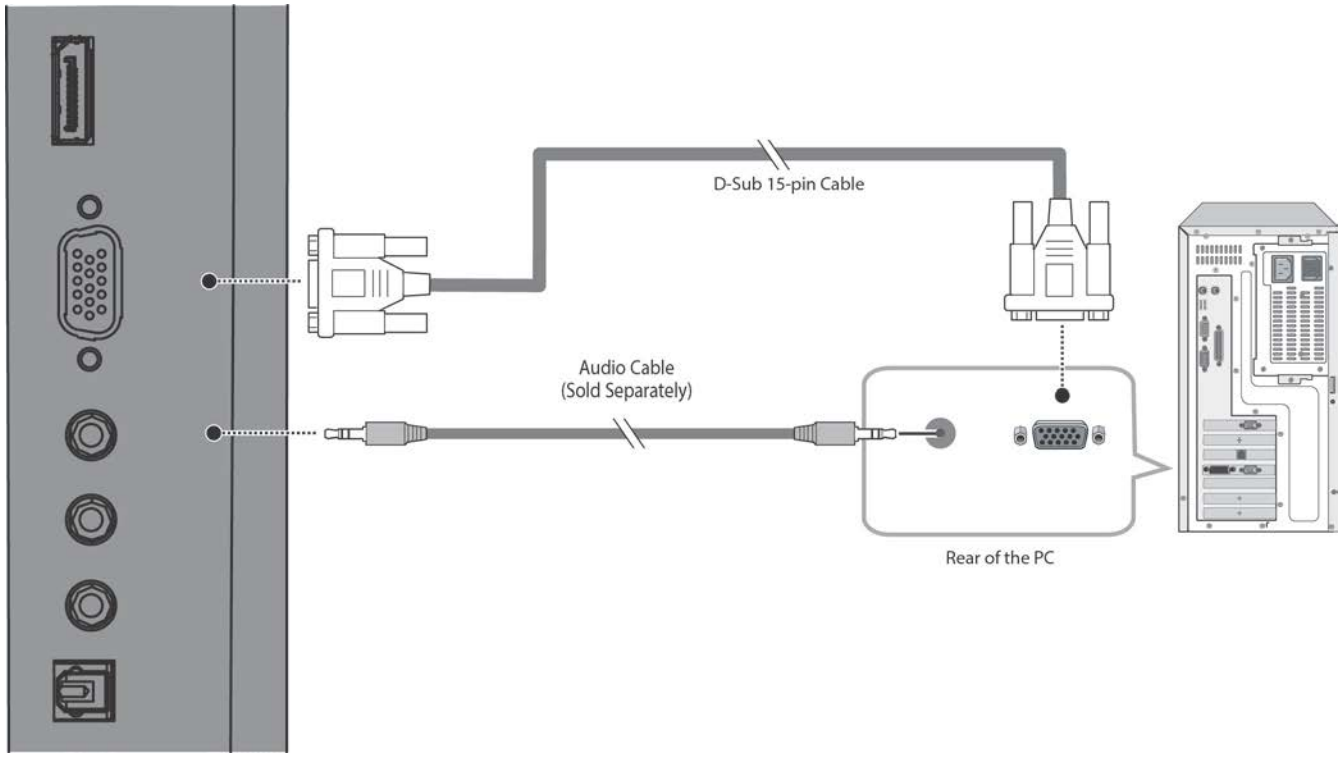


Figure 3-8. VGA Source Connections

Turning on the Power

1. Turn on your source components.
2. Plug the female end of the supplied power cord into the AC receptacle on the side of the display (AC 100V ~ 240V). See Figure 2-2.
3. Connect the other end to your AC power source.
4. Turn on the main power switch at the side of the display (see Figure 2-1). The power indicator lights orange to indicate that the display is in “standby” mode.
5. Press the power button ( ) on the remote control to turn on the display or press the power button ( ) on the keypad.
6. After a brief warm-up period, the display will display an image.

NOTE *If there's no input signal for a period of time, the display will automatically go into power saving (sleep) mode.*

Changing the OSD Language

The display OSD language is initially set to English, but can also display the menus in different languages.

To change the OSD language:

1. Press **MENU**.
2. Select Basic Settings from the Main Menu.
3. Select OSD Language from the Basic Settings Menu.
4. Press ◀ or ▶ to select the desired language and press ENTER. The change takes effect immediately.

Enabling the Touch Screen

Before setting up your display to support touch screen capability, ensure that:

- The touch screen controller host computer is turned off.
- The display is turned on.
- The video output from the computer is connected to a video input on the display. See Figure 3-6, Figure 3-7 or Figure 3-8.

Connecting the Touch Screen Controller Host Computer to the Display

Use the provided USB cable to connect the touch screen controller host computer to the USB input as shown in Figure 3-9.

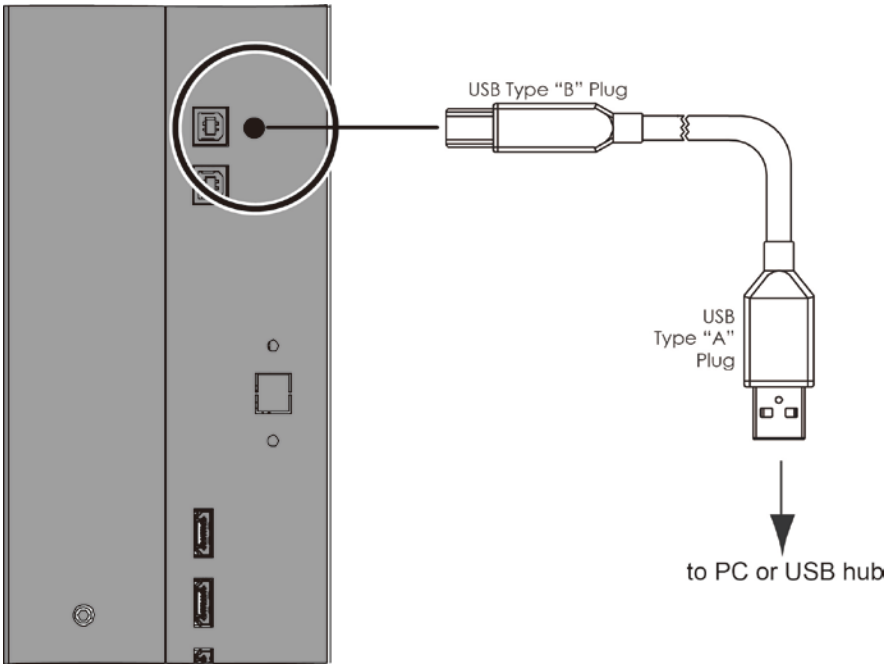


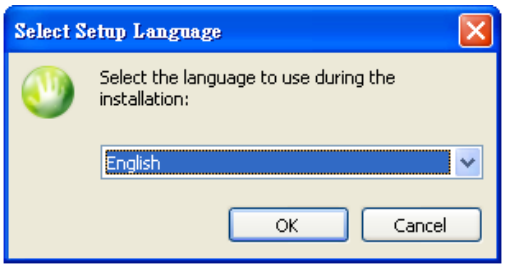
Figure 3-9. Touch Screen Controller (USB) Connection

After (and ***only*** after) making this connection, turn on your host computer.

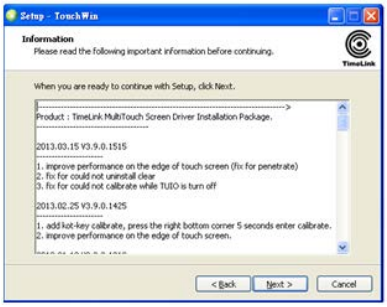
Software Installation

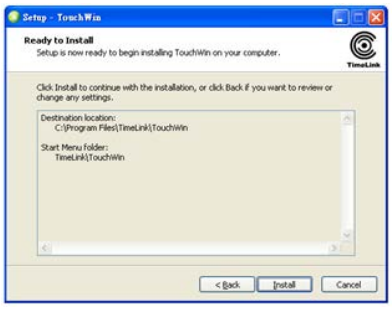
1. Double-click the installation file **TouchWin-[x.x.x.xxxx].exe**, located on USB key provided with the display. (You can also download the most recent version of the TouchWin software from http://www.timelink.cn/index.php?m=content&oneid=369&id=385)

2. Choose the desired setup language (English or Simplified Chinese), then click **OK**.



3. The TouchWin Setup Wizard appears. Click **Next** twice, then click **Install**.

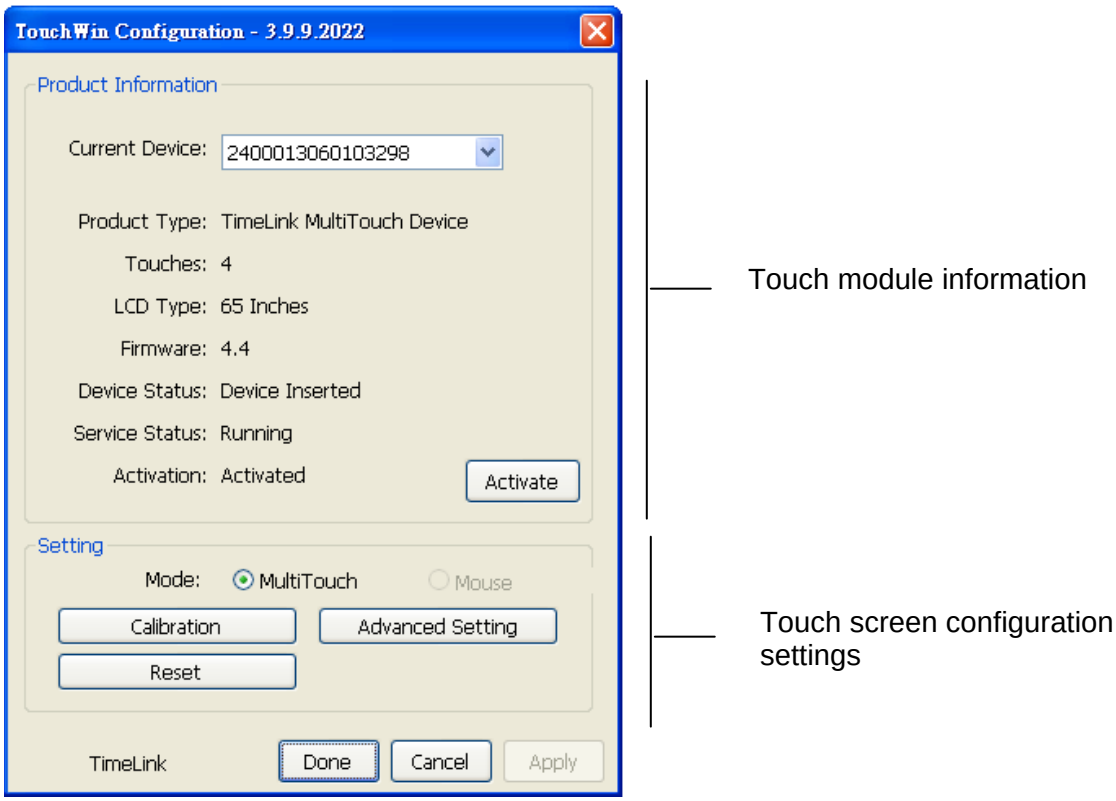




4. Select **Yes, restart the computer now** and click **Finish** to restart your computer and complete the installation.

Touch Screen Configuration Instructions

From the Windows Start menu, choose **Timelink -> TouchWin**.



Product Information:

This area of the TouchWin configuration window contains a variety of information about the touch module: the product type, firmware version and operating status. Should you ever need to contact Technical Support, this information will help them answer your questions or resolve product performance issues.

Settings:

From this area of the TouchWin configuration window, you can change settings, calibrate the touch screen or reset the product to its factory-default state.

The following paragraphs describe these settings in detail. When you are finished configuring the touch screen, click **Done** to save your changes or **Cancel** to discard them.

- **Mode:**
  Choose one of the following, then click **Done**.

- **MultiTouch:** This mode is available only in Windows operating systems that support multi-touch; the user can interact with the display using multiple fingers simultaneously and independently of each other. (Refer to ***Software Requirements (Multi-Touch Operation)***, above.)

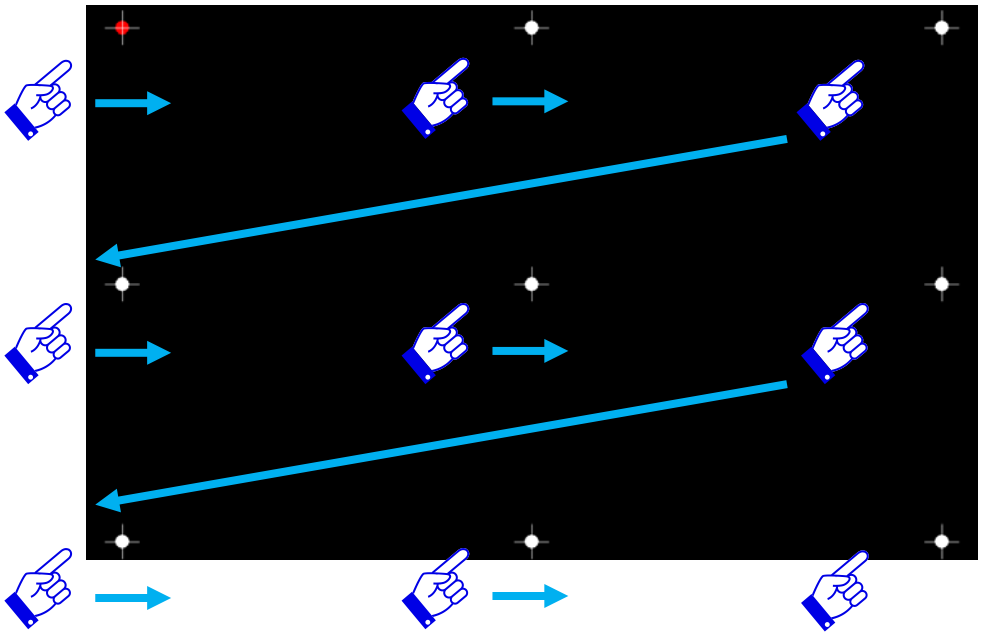
- **Mouse:** This mode simulates the mouse to process the touch points. Generally, this mode is single-touch. All of the operating systems listed in the previous section (refer to ***Installing TouchWin Software*** on page 56) support mouse mode.

Calibration:

If touching the screen does not place the cursor in the desired position, you may be able to correct this by performing a touch screen engine calibration. To do this:

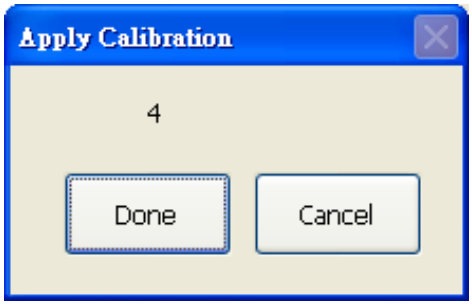
a. Click **Calibration**. A red spot and eight white spots against a black background appear on the screen.

b. Click the red spot by hand and follow the red spot moving to finish the nine-point touch calibration.

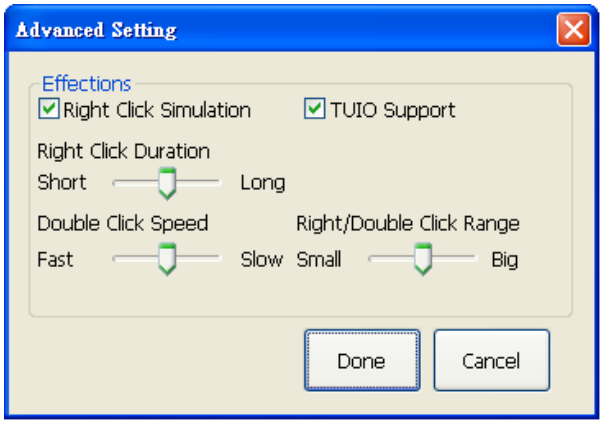


Only click the nine points with a finger on the black screen when calibrating.

c. When you complete the nine-point calibration, a confirmation window appears. Click **Done** to accept the calibration; click **Cancel** or do nothing (in which case the calibration window automatically disappears after five seconds) to cancel the calibration.



- **Advanced Setting:**
  Click **Advanced Setting** to display the Advanced Setting window. When you are finished, select **Done** to save your changes or **Cancel** to discard them.



- **Right Click Simulation:** When this option is enabled, pressing on the screen (as opposed to tapping it) performs a “right-click” mouse button action. The amount of time the finger must remain on the touch screen to perform this action is configurable; refer to ***Right Click Duration***, below.
- **TUIO (Tangible User Interface Object) Support:** Certain applications require access to touch point messages via the TUIO protocol. Also, certain operating systems require TUIO to provide multi-touch capability (refer to ***Software Requirements (Single-Touch Operation)*** on page 20). Therefore, it is recommended that you enable this option.
- **Right Click Duration:** When Right Click Simulation is enabled, this slider controls how long a finger press action must be in order for it to be interpreted as a “right-click” action.
- **Double Click Speed:** This slider controls the maximum duration between two touches in order for them to be interpreted as a “double-click” action.
- **Right/Double Click Range:** This slider controls the maximum distance between two touches in order for them to be interpreted as a “double-click” or “right-click” action.
- **Reset:**
  To restore all TouchWin configuration settings to their factory defaults and undo the effects of any previous calibrations, click **Reset**.

4. Operation

Using the On-Screen Menus

To display the on-screen menus, press MENU on the remote control (Figure 2-3) or built-in keypad (Figure 2-1).

To select a sub-menu, use the ▲ and ▼ buttons to highlight it. Then, press ▶ to enter that sub-me nu.

To select a menu item, use the ▲ and ▼ buttons to highlight it. Then, press ◀ or ▶ to adjust that setting and press ENTER.

The OSD menus are arranged hierarchically, as shown in Figure 4-1. Depending on the selected input source and signal characteristics, some menu options may not be available.

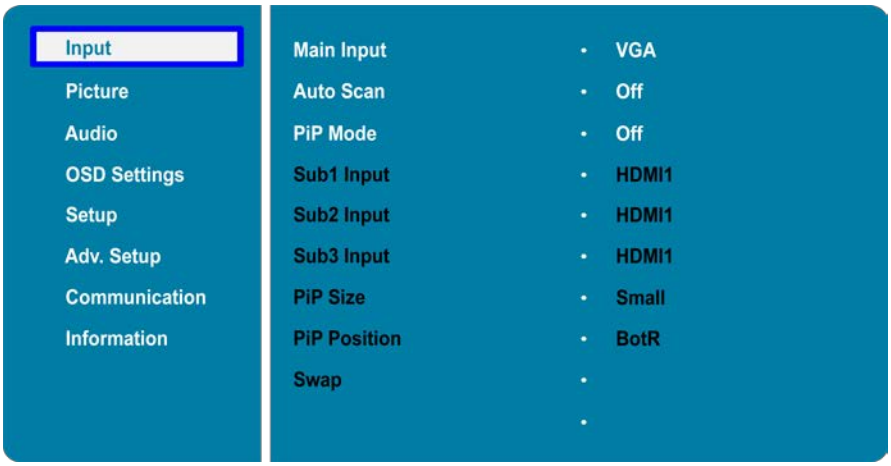
Main Menu	SubMenu	Value
Input	Main Input	VGA; DisplayPort; HDMI1; HDMI2; HDMI3; HDMI4;
	Auto Scan	**Off**; Main; PxP; All
	PiP Mode	Off; PiP; PbP; 3Window; 4Window
	Sub1 Input	VGA; DisplayPort; HDMI1; HDMI2; HDMI3; HDMI4
	Sub2 Input	(same as above)
	Sub3 Input	(same as above)
	PiP Size	Small; Mid; Large
	PiP Position	TopR; TopL; BotR; BotL
	Swap	
Picture	Picture Format	**Main**: Full Screen/Letterbox/ 4:3/1:1; **PxP**: Full Screen/Letterbox/ 4:3
	Scheme	**User**, Vivid, Cinema, Game, Sport
	Contrast	0, 1, 2, ..., **50**, ...100
	Brightness	0, 1, 2, ..., **50**, ...100
	Sharpness	0, 1, 2, ..., **50**, ...100
	Hue	0, 1, 2, ..., **50**, ...100
	Saturation	0, 1, 2, ..., **50**, ...100
	Backlight	0, 1, 2, ..., 50, ..., **80**, ...100
	Colour Temp & Gamma	5000K; 6500K; 7500K; **9300K**; User; off; 2.2
	HDMI RGB Range	Auto; Full; Limited
Audio	Volume	0~100
	Treble	-6~6
	Bass	-6~6
	Balance	-6~6
	Internal Speaker	On; Off
	Audio Source	Line-In ; DisplayPort ; HDMI1 ; HDMI2 ; HDMI3 ; HDMI4 ;

Main Menu	SubMenu	Value
OSD Settings	Horizontal	0~100
	Vertical	0~100
	Transparency	Off; 1~4
	OSD Timeout	5s; 10s; 20s; 30s; 60s
	Language	**English**, German, Chinese
	Splash Screen	On; Off
Setup	Auto Adjustment	
	H.Position	0~100
	V.Position	0~100
	Phase	0~100
	Clock	0~100
	Zoom	10 steps
	Power LED	On; Off
	Real Time Clock	User Mode; Workday Mode; Everyday Mode
Adv. Setup	Smart Light Control	Off; DCR; Light Sensor
	IRFM	On; **Off**
	Noise Reduction	**Off**; Low; Medium; High
	Wake Up From Sleep	VGA Only; Digital, RS232. Ethernet; Never Sleep
	DP Ver.	1.1; 1.2
	EDID Setup	HDMI: 4K2K/1080P; DP: 4K2K/1080P
	Touch Control	Auto; External
	Factory Reset	Yes; No
Communication	RS232 Baud Rate	**115200**; 38400; 19200; 9600
	Enable Network	Yes; No
	IP Address Settings	Please refer to Section 5.1 detail settings.
	Power Status Alert	Yes; No
	Source Status Alert	Yes; No
	Signal Lost Alert	Yes; No
	Load Default	Yes; No
	Device MAC	Shows the MAC address of the device
Information	(Timing info)	Shows the name of input source
	Firmware Version	Shows the firmware version of the monitor
	SubMCU Version	Shows the firmware version of the monitor
	Serial Number	Shows the Serial Number of the monitor

NOTE *Default settings appear in bold type.*

Figure 4-1. OSD Menu Structure

Input Menu

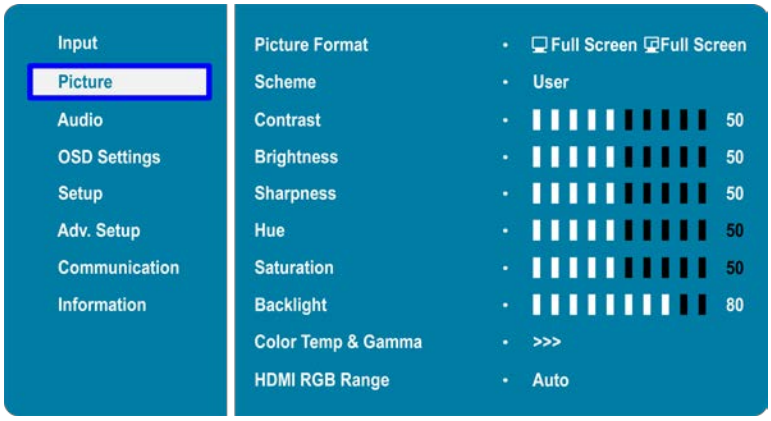


This menu is used for selecting the main input source (Main) and up to three Picture-in-Picture input sources (Sub1, Sub2 and Sub3). Up to four sources can be displayed at the same time.

Main Input	
	Select the main input source **Options:** DisplayPort, HDMI1, HDMI2, HDMI3, HDMI4, VGA
Auto Scan	
	Select whether the display will automatically scan for a main input source **Options:** Off, Main, PxP, All
PiP Mode	
	Select the PiP (Picture-in-Picture) mode **Options:** Off, PiP, PbP, 3Window, 4Window
Sub1 Input	
	Select the source for the primary PiP window **Options:** DisplayPort, HDMI1, HDMI2, HDMI3, HDMI4, VGA Note: This function is only available when PiP Mode is set to PiP, PbP, 3Window or 4Window
Sub2 Input	
	Select the source for the secondary PiP window **Options:** DisplayPort, HDMI1, HDMI2, HDMI3, HDMI4, VGA Note: This function is only available when PiP Mode is set to 3Window or 4Window
Sub3 Input	
	Select the source for the tertiary PiP window **Options:** DisplayPort, HDMI1, HDMI2, HDMI3, HDMI4, VGA Note: This function is only available when PiP Mode is set to 4Window
PIP Size	
	Select the size of the primary PiP window **Options:** Small, Mid, Large Note: This function is only available when PiP Mode is set to PiP
PIP Position	
	Set the position of the primary PiP window **Options:** TopR, TopL, BotR, BotL Note: This function is only available when PiP Mode is set to PiP
Swap	
	Swap the main input source with the primary PiP source Note: This function is only available when PiP Mode is set to PiP, PbP, 3Window or 4Window

Picture Menu

This menu is used for making common image adjustments.



Picture Format	
	Adjust the picture format of the screen **Options:** Full Screen, Letterbox, 4:3, 1:1; **Default:** Full Screen
Scheme	
	Press ◄or► to select one of the following: **Options:** User, Vivid, Cinema, Game, Sport; **Default:** User
Contrast	
	Increase or decrease the contrast of picture. Press ◄ **or** ► to select the desired level, and then press **ENTER**. Range: 0~100; **Default:** 50
Brightness	
	Increase or decrease the brightness of picture. Press ◄or► to select the desired level, and then press **ENTER**. Range: 0~100; **Default:** 50
Sharpness	
	Adjust the definition of picture. Press ◄ **or** ► to select the desired level, and then press **ENTER**. Range: 0~100; **Default:** 50
Hue	
	Increase or decrease the green hue. Press ◄ **or**► to select the desired level, and then press **ENTER.** Range: 0~100; **Default:** 50 Note: This function is not available when displaying PC or graphics sources
Saturation	
	Adjust the brilliance and brightness. Press ◄or► to select the desired level, and then press **ENTER**. Range: 0~100; **Default:** 50 Note: This function is not available when displaying PC or graphics sources
Backlight	
	Increase or decrease the intensity of the LCD backlight. Press ◄or► to select the desired level, and then press **ENTER**. Range: 0~100; **Default:** 80
Gamma	
	Select gamma curve **Options:** Off, 2.2; **Default:** 2.2
Colour Temp	
	Select a colour temperature, or select User to make RGB adjustments. **Options:** User, 5000K, 6500K, 7500K and 9300K; **Default:** 9300K

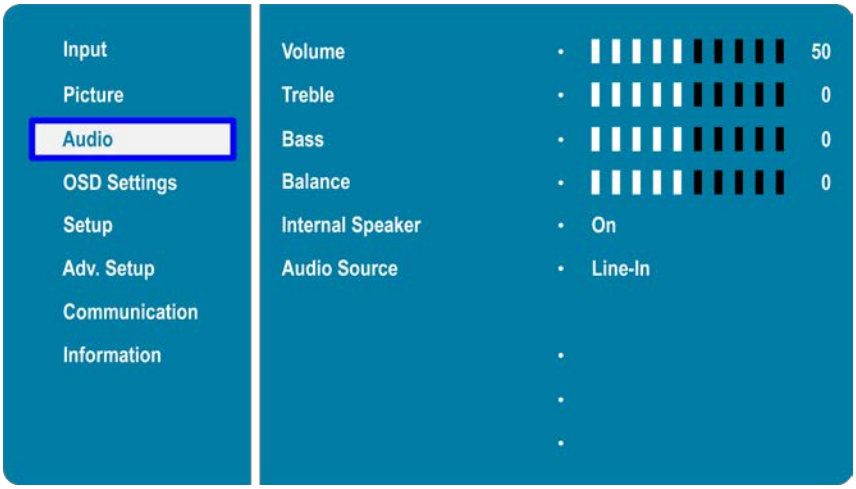
HDMI RGB Range	
	Select an RGB range for the HDMI input. **Options:** Auto, Full, Limited; **Default:** Auto

Colour Temperature Settings

Red Gain	
	Set Colour Temperature to “User Mode” in order to adjust this setting. Range: 0~100 **Default:** 100
Green Gain	
	Set Colour Temperature to “User Mode” in order to adjust this setting. Range: 0~100 **Default:** 100
Blue Gain	
	Set Colour Temperature to “User Mode” in order to adjust this setting. Range: 0~100 **Default:** 100
Red Offset	
	Set Colour Temperature to “User Mode” in order to adjust this setting. Range: 0~100 **Default:** 50
Green Offset	
	Set Colour Temperature to “User Mode” in order to adjust this setting. Range: 0~100 **Default:** 50
Blue Offset	
	Set Colour Temperature to “User Mode” in order to adjust this setting. Range: 0~100 **Default:** 50

Audio Menu

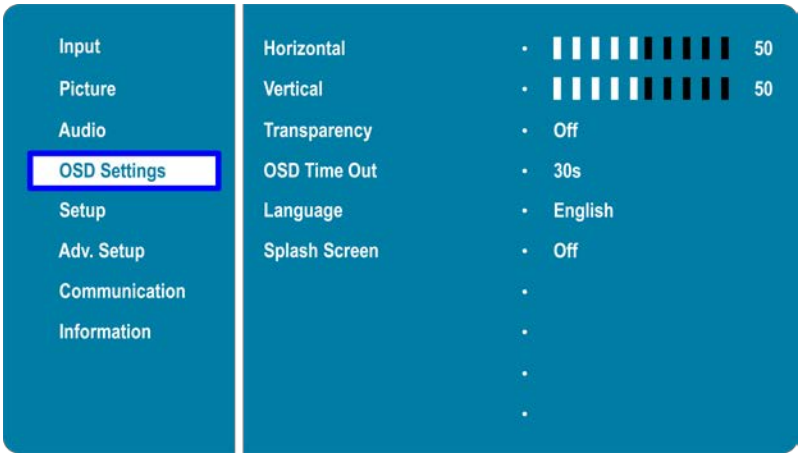
This menu is used for adjusting volume settings.



Volume	
	Adjust the sound. Press ◄ or ► to select the desired level, and then press **ENTER**. Range: 0~100 **Default:** 50
Treble	
	Adjust the sound in high tones (treble). Press ◄ or ► to select the desired level, and then press **ENTER**. Range: -6~6 **Default:** 0
Bass	
	Adjust the sound in low tones (bass). Press ◄ or ► to select the desired level, and then press **ENTER**. Range: -6~6 **Default:** 0
Balance	
	Adjust the balance of the left and right speakers. Press ◄ or ► to select the desired level, and then press **ENTER**. Range: -6~6 **Default:** 0
Internal Speaker	
	Turn the internal speaker on or off **Default:** On
Audio Source	
	Select the audio source for the Main input Options: DisplayPort, HDMI1, HDMI2, HDMI3, HDMI4, Line-In **Default:** Line-in

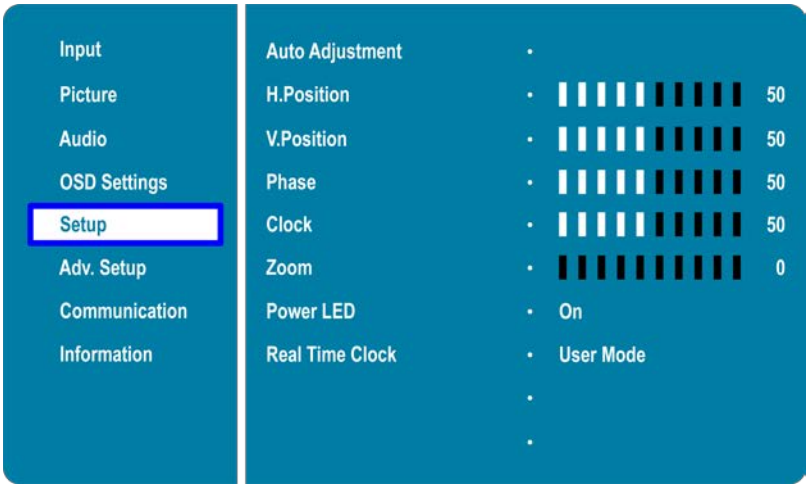
OSD Settings Menu

This menu is used to make initial set-up adjustments to the OSD (On-Screen Display) menu and other on-screen messages.



Horizontal	
	Adjust the horizontal position of the OSD menu. Press ◄ or ► to select the desired level, and then press **ENTER**. Range: 0~100 **Default:** 50
Vertical	
	Adjust the vertical position of the OSD menu. Press ◄ or ► to select the desired level, and then press **ENTER**. Range: 0~100 **Default:** 50
Transparency	
	Adjust the transparency of the OSD menu. Press ◄ or ► to select the desired level, and then press **ENTER**. Range: Off, 1~4; **Default:** Off
OSD Timeout	
	Adjust the time in seconds before the OSD menu disappears. Press ◄ or ► to select the desired level, and then press **ENTER**. Options: 5s, 10s, 20s, 30s, 60s **Default:** 30s
Language	
	Select the OSD language Options: English, Slovenian, Croatian, Serbian, Hungarian, Macedonia, Bosnian **Default:** English
Splash Screen	
	Select whether a splash screen appears when the monitor is powered up Options: On, Off **Default:** On

Setup Menu



Auto Adjustment	
	Force the display to reacquire and lock to the input signal (VGA source only). This is useful when the signal quality is marginal. Note: This feature does not continually reacquire the signal. Options: No, Yes **Default:** No
H. Position	
	Adjust the horizontal position of the image (VGA source only). Press ◄ or ► to select the desired level, and then press **ENTER**. Range: 0~100 **Default:** 50
V. Position	
	Adjust the vertical position of the image (VGA source only). Press ◄ or ► to select the desired level, and then press **ENTER**. Range: 0~100 **Default:** 50
Phase	
	Adjust the phase of the displayed signal (VGA source only). Press ◄ or ► to select the desired level, and then press **ENTER**. Range: 0~100
Clock	
	Adjust the clock of the displayed signal (VGA source only). Press ◄ or ► to select the desired level, and then press **ENTER**. Range: 0~100
Zoom	
	Adjust the zoom (overscan) of the image. Press ◄ or ► to select the desired level, and then press ENTER. Range: 10 steps
Power LED	
	Enable or disable the status LED Options: On, Off **Default:** On
Real Time Clock	
	Set the internal clock of the display, and to power on and off the display at preset times if desired. Options: User mode, Workday mode, Everyday mode **Default:** User mode

Advanced Setup Menu

Smart Light Control	
	Enable dynamic contrast (DCR) or ambient light sensor Options: Off, DCR, Light Sensor **Default:** Off
IRFM	
	Create slight frame motion to help avoid image retention Options: On, Off **Default:** Off
Noise Reduction	
	Reduce random noise in the video content Options: Off, Low, Medium, High **Default:** Off
Wake Up From Sleep	
	Options: VGA Only, Digital, RS232, Ethernet; Never Sleep **Default:** VGA Only
DP Ver.	
	Select DisplayPort version of the DisplayPort inputs Options: 1.1, 1.2 Note: DisplayPort 1.2 is the more modern standard and supports 3840x2160 @ 60 Hz resolution. However, sometimes DisplayPort 1.1 is needed for compatibility with older graphics cards.
EDID Setup	
	Select EDID (Extended Display Identification Data) of the HDMI and DisplayPort inputs Options: 1080p, 4K2K Note: Use the 1080p setting for the broadest support of lower resolution sources. Use 4K2K setting to support high resolution sources such as 3840x2160.
Touch Control	
	Select one of the touch connections, or choose auto detection. Options: Auto, External **Default:** Auto
Factory Reset	
	Restore all settings to their default. Options: No, Yes **Default:** No

Wake Up from Sleep

By default, the display will enter power saving (Sleep Mode) if no signal is received for 5 minutes. Normally, the RS-232, DisplayPort, and HDMI inputs are inactive in Sleep Mode, to save power.

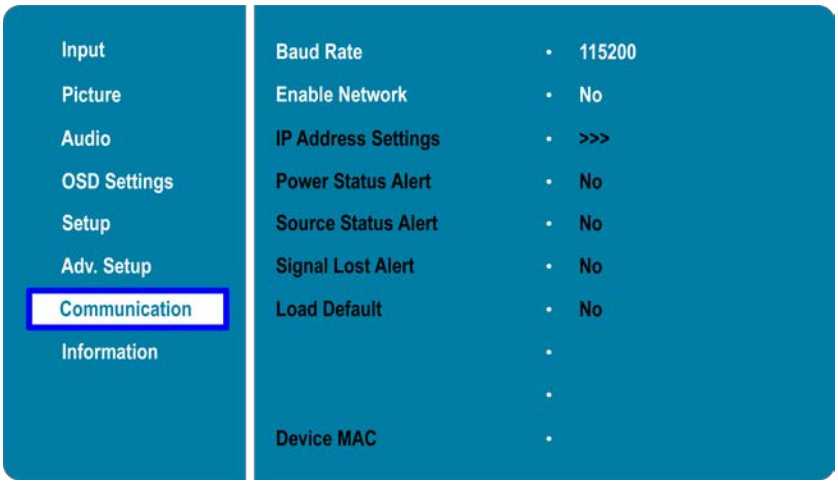
To change the behavior of Sleep Mode, change the "**Wake up from Sleep**" setting in the "**Adv. Setup**" menu.

VGA Only (default) – The RS-232, DisplayPort, and HDMI inputs are inactive when the display is in sleep mode. The display will wake up when it receives a signal at the VGA input.

Digital, RS232, Ethernet – The RS-232, DisplayPort and HDMI inputs stay active when the display is in sleep mode. The display will wake up when it receives a signal at either of the DisplayPort, HDMI, or RS-232 inputs, or via LAN connection.

Communication Menu

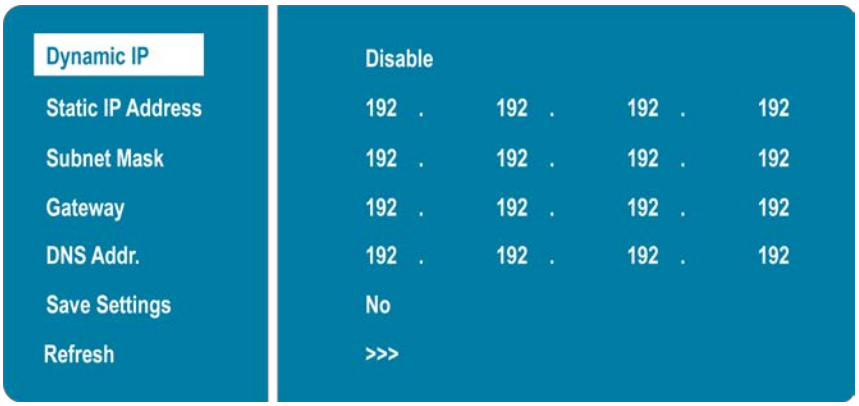
This menu configures the display's RS232 and Ethernet communication ports.



Baud Rate	
	Select the baud rate of the display's RS232 port Options: 115200, 38400, 19200, 9600 **Default:** 115200
Enable Network	
	Enable the display's built-in Ethernet port Options: No, Yes **Default:** No
IP Address Settings	
	Enable Dynamic IP mode or set the static IP address of the display's Ethernet port
Power Status Alert	
	Enable an automatic alert when the display is powered down Options: No, Yes **Default:** No
Source Status Alert	
	Enable an automatic alert when the source is changed Options: No, Yes **Default:** No
Signal Lost Alert	
	Enable an automatic alert when the video signal is lost Options: No, Yes **Default:** No
Load Default	
	Load default communication settings Options: No, Yes **Default:** No
Device MAC	
	Display the MAC address of the device

Network Settings

To assign an IP address to your display, access the IP Address Settings Menu in the **Communication Menu**. Consult your system administrator if you do not know how to configure the parameters shown in the menu.

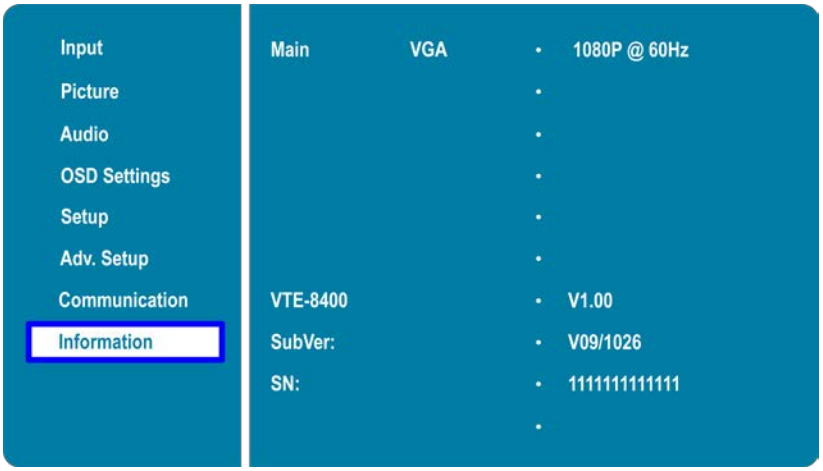


The default settings are shown below.

Item	Setting
DHCP	Disable
IP ADDRESS	192.168.2.1
SUBNET MASK	255.255.255.0
DEFAULT GATEWAY	192.168.2.1
DNS Addr.	192.168.2.1

Information

This read-only menu provides information on the active sources and the latest firmware version



5. Maintenance and Troubleshooting

Maintenance

The VIVIDtouch Series LED Displays does not require any routine maintenance other than occasional cleaning with a non-abrasive cloth. There are no user-serviceable or replaceable parts. Unless you are a qualified, factory-trained technician, do not attempt to repair or replace any system component yourself. You will void the product warranty if you do so.

Troubleshooting

Table 5-1 provides some general guidelines for troubleshooting problems you may encounter with the VIVIDtouch Series LED Display. If the suggested solutions fails to resolve the problem or if you encounter an issue not described here, please contact your dealer.

Table 5-1. Troubleshooting Chart

Symptom	Possible Cause(s)	Solution
The display does not turn on.	• The display is not plugged in or the AC outlet is not active. • The main power switch is off. • The remote control batteries have run out.	• Ensure that the display is **plugged in and that the AC outlet is active.** • Set the main power switch (see Figure 2-1) to the on position. • Replace the batteries.
The display is on and menus appear, but there is no picture.	• Incorrect source selection. • Source component is not turned on. • Source component is connected incorrectly or not at all.	• Select the correct source. • Turn on the source component. • Check connections from the source component to the display.
The remote control does not work.	• The remote control batteries have run out. • The buttons are locked. • IR extender is not connected.	• Replace the batteries. • Unlock the buttons by pressing **ENTER**, **ENTER**, **EXIT**, **EXIT**, **ENTER** and **EXIT**, in sequence. • Verify that the IR extender cable is correctly connected (see Figure 3-3).
Image geometry is incorrect.	• Incorrect aspect ratio selection.	• Select a different aspect ratio.
The display is jittery or unstable.	• Poor-quality or improperly connected source. • The horizontal or vertical scan frequency of the input signal may be out of range for the display.	• Ensure that the source is properly connected and of adequate quality for detection. • Correct at the source.
Image is too bright and/or lacks definition in the bright areas of the image.	• Contrast is set too high.	• Decrease the contrast setting.

Table 5-1. Troubleshooting Chart (continued)

Symptom	Possible Cause(s)	Solution
Image appears "washed out" and/or dark areas appear too bright.	• Brightness is set too high.	• Decrease the brightness setting.
Image is too dark.	• Brightness and/or Backlight are set too low.	• Increase the brightness and/or backlight settings.
Images from an HDMI source do not display.	• The resolution and frequency of the video card in the computer are not compatible with the display. • HDMI cable from source to display is either defective or too long.	• Select a compatible resolution and vertical frequency (refer to ***Supported Timings*** on page 61). • Try a known-good and/or shorter HDMI cable.
Computer images do not display correctly.	• The resolution and frequency of the video card in the computer are not compatible with the display. • Clock and Phase settings need adjustment.	• Select a compatible resolution and vertical frequency (refer to ***Supported Timings*** on page 61). • Adjust Clocks and Phase settings (refer to ***Phase - VGA sources*** on page 45 and ***Clock - VGA*** sources on page 45).
Touch screen doesn't work.	• Multi-touch controller host computer is not connected correctly. • Host computer hardware or OS incompatibility.	• See Figure 3-7. • Refer to ***Enabling the Touch Screen*** on page 31.

Should you require assistance with a suspected hardware fault, please contact the support line below. You will require your unit serial number. The operator will attempt to diagnose any fault and will take action as appropriate.

vividtouch

UK Warranty Support

Tel. 08450 724 999

Email. services@steljes.co.uk

6. External Control

In addition to using the display keypad or remote control unit, you can control the display using a serial (RS-232) link to send ASCII commands and receive responses to those commands.

You also use discrete infrared (IR) control codes to program a third-party remote control unit. For more information, refer to Using Discrete IR Codes on page 46.

Serial Communications

The display uses a simple text-based control protocol to take requests from control devices and to provide responses to such devices. This section describes how to send control messages over a serial link between the display and an automation/control system or a PC running a terminal emulation program such as Windows® HyperTerminal or Tera Term.

RS-232 Connection and Port Configuration

Connect your control system or PC to the RS-232 input of the display as shown in Figure 3-2.

Configure the RS-232 controller or PC serial port as follows: no parity, 8 data bits, 1 stop bit and no flow control. Set the baud rate to 115200, to match that of the display RS-232 port.

Command and Response Format

Commands sent from an automation/control system or PC to the display must have the following format:

[STX] [IDT] [TYPE] [CMD] ([VALUE] or [REPLY]) [ETX] [CR]

Where:

- [STX] indicates the start of the command data (always 07).
- [IDT] is the display ID (always 01).
- [TYPE] is the command type:
  - 00 = return to host (response from the LCD panel)
  - = read / action
  - = write
- [VALUE] is the parameter setting for the command.
- [REPLY] is the parameter setting for the command, acknowledged by the display in its response to a command.
- [ETX] indicates the end of the command data (always 08).
- [CR] is the ASCII carriage return key (0x0D).

Command and Response Examples

Here are some examples of serial commands and their responses:

Table 6-1. Serial Command/Response Examples

Description	Command Sent to LCD Panel	Response Received from LCD Panel
Turn LCD panel power off.	07 01 02 50 4F 57 00 08	07 01 00 50 4F 57 00 08
Turn LCD panel power on.	07 01 02 50 4F 57 01 08	07 01 00 50 4F 57 01 08
Request LCD panel power status.	07 01 01 50 4F 57 08	07 01 00 50 4F 57 XX 08 (XX = 0 when off or 1 when on)
Set the LCD panel contrast to 30 (1E hex).	07 01 02 43 4F 4E 1E 08	07 01 00 43 4F 4E 1E 08
Reset the LCD panel display settings.	07 01 02 41 4C 4C 00 08	07 01 00 41 4C 4C 00 08
Request LCD panel serial number.	07 01 01 53 45 52 08	07 01 00 53 45 52 S(0)…S(12) 08 S(0) …S(12) = the serial number in ASCII
Request LCD panel firmware version.	07 01 01 47 56 45 08	07 01 00 47 56 45 S(0)…S(5) 08 S(0) …S(5) = the firmware version in ASCII

Serial Command List

Table 6-2 lists all supported commands.

Table 6-2. Serial Commands

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)
Power Control and Input Source	Power Control	POW	W/R	00	00	Off (soft power)	50 4F 57
				01	01	On (soft power)	
	Input Source	MIN	W/R	00	00	VGA	4D 49 4E
				09	09	HDMI 1	
				10	10	HDMI 2	
				11	11	HDMI 3	
				12	12	HDMI 4	
				13	13	Displayport	
Display Adjustment	Display Adjustment	BRI	W/R	0~100	Current value	Back Light Brightness	42 52 49
		BRL	W/R	0~100	Current value	Digital Brightness Level	42 52 4C
		BLC	W/R	00	00	Off (Back Light)	42 4C 43
				01	01	On (Back Light)	
		CON	W/R	0~100	Current value	Contrast	43 4F 4E
		HUE	W/R	0~100	Current value	Hue	48 55 45
		SAT	W/R	0~100	Current value	Saturation	53 41 54
		NOR	W/R	00	00	Noise Reduction: Off	4E 4F 52
				01	01	Noise Reduction: Low	
				02	02	Noise Reduction: Medium	
				03	03	Noise Reduction: High	

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)
		USR	W/R	0~100	Current value	Red Gain (mapping 0~100)	55 53 52
		USG	W/R	0~100	Current value	Green Gain (mapping 0~100)	55 53 47
		USB	W/R	0~100	Current value	Blue Gain (mapping 0~100)	55 53 42
		UOR	W/R	0~100	Current value	Red Offset (mapping 0~100)	55 4F 52
		UOG	W/R	0~100	Current value	Green Offset (mapping 0~100)	55 4F 47
		UOB	W/R	0~100	Current value	Blue Offset (mapping 0~100)	55 4F 42
		COT	W/R	00	00	User	43 4F 54
				01	01	6500K	
				02	02	9300K	
				07	07	7500K	
		GAC	W/R	00	00	Off (Gamma)	47 41 43
				01	01	2.20 (Gamma)	
	VGA Adjustment	PHA	W/R	0~100	Current value	Phase	50 48 41
		CLO	W/R	0~100	Current value	Clock	43 4C 4F
		HOR	R/W	0~100	Current value	Horizontal Position	48 4F 52
		VER	R/W	0~100	Current value	Vertical Position	56 45 52
		ADJ	W	00	00	Auto Adjust	41 44 4A
	Sharpness	SHA	W/R	0~100	Current value	Sharpness	53 48 41
Other Control	PIP Adjust	PSC	W/R	00	00	PIP OFF	50 53 43
				01	01	PIP Small	
				02	02	PIP medium	
				03	03	PIP large	
				04	04	PbP (Side By Side)	
				06	06	3 Windows	
				07	07	4 Windows	
		PIO	W/R	(refer to PIN)	(refer to PIN)	Select the input source of sub window 2 (refer to PIN)	50 49 4F
		PIP	W/R	(refer to PIN)	(refer to PIN)	Select the input source of sub window 3 (refer to PIN)	50 49 50
	PIP position	PPO	W/R	00	00	PIP Position Bottom-left	50 50 4F
				01	01	PIP Position Bottom-Right	
				02	02	PIP Position Top-left	
				03	03	PIP Position Top-right	
	PIP/Main Swap	SWA	W	00	00	Swap main and PIP	53 57 41

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)
Other Control	SCALING	ASP	W/R	00	00	Native	41 53 50
				01	01	Full Screen	
				02	02	Pillarbox/4:3	
				03	03	Letterbox	
		PAS	W/R	01	01	Full Screen	50 41 53
				02	02	Pillarbox/4:3	
				03	03	Letterbox	
		ZOM	W/R	0~10	0~10	Adjust overscan ratio	5A 4F 4D
	Baudrate Adjustment	BRA	W/R	00	00	115200	42 52 41
				01	01	38400	
				02	02	19200	
				03	03	9600	
	Other Control	RCU	W	00	00	MENU Key	52 43 55
				01	01	INFO Key	
				02	02	UP Key	
				03	03	DOWN Key	
				04	04	LEFT Key	
				05	05	RIGHT Key	
				06	06	ENTER Key	
				07	07	EXIT Key	
				08	08	VGA Key	
				10	10	HDMI1 Key	
				11	11	HDMI2 Key	
				12	12	DISPLAYPORT Key	
				18	18	SOURCE Key	
				19	19	P-SOURCE Key	
				20	20	PIP Key	
				21	21	P-POSITION Key	
				22	22	SWAP Key	
				23	23	SCALING Key	
				24	24	FREEZE Key	
				25	25	MUTE Key	
				26	26	BRIGHT Key	
				27	27	CONTRAST Key	
				28	28	AUTO Key	
				29	29	VOLUME+ Key	
				30	30	VOLUME- Key	
				31	31	HDMI3 Key	
				32	32	HDMI4 Key	
		ALL	W	00	00	Reset all	41 4C 4C
		KLC	W/R	00	00	Un-lock keys	4B 4C 43
				01	01	Lock keys	
		SER	R		13 bytes	Read Serial Number	53 45 52
		MNA	R		13 bytes	Read Model Name	4D 4E 41
		GVE	R		6 bytes	Read Firmware Version	47 56 45
		RTV	R		Current value	Read RS232 table Version	52 54 56
		GVS	W	00	[00]+5 byte	Querying main version	47 56 53
				01	[01]+3 byte	Querying sub mcu version	
				02	[02]+5 byte	Querying network module version	

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)
Other Control	Audio	VOL	W/R	0~100	Current value	volume	56 4F 4C
		BAS	W/R	0~12	Current value	Bass(-6~6)	42 41 53
		TRE	W/R	0~12	Current value	Treble(-6~6)	54 52 45
		BAL	W/R	0~12	Current value	Bass(-6~6)	42 41 4C
		CAS	W/R	00	00	Current audio source :Analog	43 41 53
				01	01	Current audio source :HDMI1	
				02	02	Current audio source :HDMI2	
				03	03	Current audio source :HDMI3	
				04	04	Current audio source :HDMI4	
				05	05	Current audio source :Displayport	
		INS	W/R	00	00	Internal Speaker Off	49 4E 53
				01	01	Internal Speaker On	
		MUT	W/R	00	00	Mute Off	4D 55 54
				01	01	Mute On	
	Scheme selection	SCM	W/R	00	00	User	53 43 4D
				01	01	Sport	
				02	02	Game	
				03	03	Cinema	
				04	04	Vivid	
Other Control	EcoMode	WFS	W/R	0	0	Set VGA_ONLY	57 46 53
				1	1	Set VGA_DIGITAL_RS232	
				2	2	Set Never_Sleep	
	RTC	RTY	W/R	0~99	0~99	Set Real time Year	52 54 59
		RTM	W/R	1~12	1~12	Set Real time Month	52 54 4D
		RTD	W/R	1~31	1~31	Set Real time Day	52 54 44
		RTH	W/R	0~23	0~23	Set Real time Hour	52 54 48
		RTN	W/R	0~59	0~59	Set Real time Minute	52 54 4E
		TMS	W/R	0	0	Everyday Mode	54 4D 53
				1	1	Workday Mode	
				2	2	User	
		AEN	W/R	1	1	Sunday Alarm Enable	41 45 4E
				2	2	Monday Alarm Enable	
				4	4	Tuesday Alarm Enable	
				8	8	Wednesday Alarm Enable	
				16	16	Thursday Alarm Enable	
				32	32	Friday Alarm Enable	
				64	64	Saturday Alarm Enable	
		AEF	W/R	1	1	Sunday Alarm Disable	41 45 46
				2	2	Monday Alarm Disable	
				4	4	Tuesday Alarm Disable	
				8	8	Wednesday Alarm Disable	
				16	16	Thursday Alarm Disable	
				32	32	Friday Alarm Disable	
				64	64	Saturday Alarm Disable	
		NNH	W/R	0~23	0~23	Monday On Hour	4E 4E 48

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)
Other Control	RTC	NNM	W/R	0~59	0~59	Monday On Minute	4E 4E 4D
		NFH	W/R	0~23	0~23	Monday Off Hour	4E 46 48
		NFM	W/R	0~59	0~59	Monday Off Minute	4E 46 4D
		ENH	W/R	0~23	0~23	Tuesday On Hour	45 4E 48
		ENM	W/R	0~59	0~59	Tuesday On Minute	45 4E 4D
		EFH	W/R	0~23	0~23	Tuesday Off Hour	45 46 48
		EFM	W/R	0~59	0~59	Tuesday Off Minute	45 46 4D
		DNH	W/R	0~23	0~23	Wednesday On Hour	44 4E 48
		DNM	W/R	0~59	0~59	Wednesday On Minute	44 4E 4D
		DFH	W/R	0~23	0~23	Wednesday Off Hour	44 46 48
		DFM	W/R	0~59	0~59	Wednesday Off Minute	44 46 4D
		UNH	W/R	0~23	0~23	Thursday On Hour	55 4E 48
		UNM	W/R	0~59	0~59	Thursday On Minute	55 4E 4D
		UFH	W/R	0~23	0~23	Thursday Off Hour	55 46 48
		UFM	W/R	0~59	0~59	Thursday Off Minute	55 46 4D
		INH	W/R	0~23	0~23	Friday On Hour	49 4E 48
		INM	W/R	0~59	0~59	Friday On Minute	49 4E 4D
		IFH	W/R	0~23	0~23	Friday Off Hour	49 46 48
		IFM	W/R	0~59	0~59	Friday Off Minute	49 46 4D
		TNH	W/R	0~23	0~23	Saturday On Hour	54 4E 48
		TNM	W/R	0~59	0~59	Saturday On Minute	54 4E 4D
		TFH	W/R	0~23	0~23	Saturday Off Hour	54 46 48
		TFM	W/R	0~59	0~59	Saturday Off Minute	54 46 4D
		SNH	W/R	0~23	0~23	Sunday On Hour	53 4E 48
		SNM	W/R	0~59	0~59	Sunday On Minute	53 4E 4D
		SFH	W/R	0~23	0~23	Sunday Off Hour	53 46 48
		SFM	W/R	0~59	0~59	Sunday Off Minute	53 46 4D
	Auto Scan	ATS	W/R	0	0	Off	41 54 53
				1	1	Main	
				2	2	Multi	
				3	3	All	
	IRFM	IRF	W/R	0	0	Off	49 52 46
				1	1	On	
	Smart Light Control	SLC	W/R	0	0	Off	53 4C 43
				1	1	DCR	
				2	2	Light Sensor	
	Power LED	LED	W/R	0	0	Off	4C 45 44
				1	1	On	
	DisplayPort Mode	DPM	W/R	0	0	DP 1.1	44 50 4D
				1	1	DP 1.2	
	HDMI EDID	EDH	W/R	00	00	4Kx2K	45 44 48
				01	01	1080P	
	DisplayPort EDID	EDP	W/R	00	00	4Kx2K	45 44 50
				01	01	1080P	
	HDMI RGB Colour Range	HCR	W/R	00	00	Auto Detect	48 43 52
				01	01	Full Range	
				02	02	Limited Range	
	Touch Control	TOC	W/R	00	00	Auto (Read Only)	54 4F 43
				02	02	Touch USB1	
				03	03	Touch USB2	
OSD Control	Transparency	OST	W/R	0~4	0~4	OSD Transparency	4F 53 54
	H Position	OSH	W/R	0~100	0~100	OSD H Position	4F 53 48
	V Position	OSV	W/R	0~100	0~100	OSD V Position	4F 53 56

Main Item	Control Item	CMD	Type	Value (DEC)	Reply (DEC)	Content	CMD (HEX)
OSD Control	OSD Timeout	OSO	W/R	5~60	Current value	OSD Timeout (5, 10, 20, 30, 60 sec)	4F 53 4F
	Splash Screen	SPS	W/R	0	0	Off	53 50 53
				1	1	On	
Ethernet Setup	Network Enable	NWE	W/R	0	0	No	4E 57 45
				1	1	Yes	
	Dynamic IP	DIP	W/R	0	0	Disable	44 49 50
				1	1	Enable	
	Default	LDS	W	0	0	Load network default settings (It will take about 15 seconds.)	4C 44 53
	E-Mail Alert	PSA	W/R	0	0	Off (Power Status Alert)	50 53 41
				1	1	On (Power Status Alert)	
		SSA	W/R	0	0	Off (Source Status Alert)	53 53 41
				1	1	On (Source Status Alert)	
		SLA	W/R	0	0	Off (Signal Lost Alert)	53 4C 41
				1	1	On (Signal Lost Alert)	
	Static IP Settings	IP1	W/R	0~255	0~255	Static IP Address 1	49 50 31
		IP2	W/R	0~255	0~255	Static IP Address 2	49 50 32
		IP3	W/R	0~255	0~255	Static IP Address 3	49 50 33
		IP4	W/R	0~255	0~255	Static IP Address 4	49 50 34
		MK1	W/R	0~255	0~255	Subnet Mask 1	4D 4B 31
		MK2	W/R	0~255	0~255	Subnet Mask 2	4D 4B 32
		MK3	W/R	0~255	0~255	Subnet Mask 3	4D 4B 33
		MK4	W/R	0~255	0~255	Subnet Mask 4	4D 4B 34
		GW1	W/R	0~255	0~255	Gateway 1	47 57 31
		GW2	W/R	0~255	0~255	Gateway 2	47 57 32
		GW3	W/R	0~255	0~255	Gateway 3	47 57 33
		GW4	W/R	0~255	0~255	Gateway 4	47 57 34
		FD1	W/R	0~255	0~255	DNS Address 1	46 44 31
		FD2	W/R	0~255	0~255	DNS Address 2	46 44 32
		FD3	W/R	0~255	0~255	DNS Address 3	46 44 33
		FD4	W/R	0~255	0~255	DNS Address 4	46 44 34
		SNS	W	0	0	Save Network Settings	53 4E 53

Using Discrete IR Codes

The display accepts commands in the form of infrared (IR) signals that conform to the NEC protocol. Each display remote control button has an IR control code associated with it.

You can use these codes to program a third-party, "universal" remote control unit to work with the display. These third-party products usually come with a computer software application for this purpose. For more information, consult the documentation provided with the remote control unit.

IR Command Protocol

The IR control codes have the following characteristics:

- Each code consists of the following:
  - A leader pulse (a modulated pulse of 9 ms followed by a non-modulated pulse of 4.5 ms);
  - 16 address bits (also called a "custom code"): eight (8) bits for the address followed by the logical inverse of the address. The custom code for the display is 16559 decimal (0x40AF, binary 01000000 10101111).
  - 16 data bits: eight (8) bits for the command followed by the logical inverse of the command; and
  - An end pulse (a modulated pulse of 0.56 ms, similar to the modulated pulse in the '0' and '1' bits). The end of the modulated pulse constitutes the end of the data transmission.
- The carrier frequency is 38 kHz, with the modulated pulses having a 33% duty cycle.
- Commands are sent at a maximum rate of 9 Hz.

For example, here is the NEC control code for the POWER button on the display remote control unit:

Hex	**40**	**AF**	**1C**	**E3**
Binary	**01000000**	**10101111**	**00011100**	**11100011**
Function	Cust. Code Byte 1	Cust. Code Byte 2	Command	Command (Logical Inverse)

IR Control Code List

Table 6-3 lists the IR control codes for the display.

Table 6-3. Infrared (IR) Control Codes

Customer Code	Data Code	Function
40AF	04FB	INFO
40AF	1CE3	POWER
40AF	07F8	VGA
40AF	08F7	DISPLAYPORT
40AF	09F6	HDMI1
40AF	0AF5	HDMI2
40AF	0BF4	HDMI3
40AF	0CF3	HDMI4
40AF	1AE5	PIP POSITION
40AF	15EA	PIP
40AF	10EF	PIP SOURCE
40AF	11EE	Low Light
40AF	0DF2	Standard
40AF	16E9	High Brightness
40AF	06F9	BLANK
40AF	13EC	FREEZE
40AF	02FD	↑
40AF	01FE	←
40AF	0EF1	MENU
40AF	03FC	→
40AF	19E6	↓
40AF	12ED	ENTER
40AF	05FA	EXIT
40AF	14EB	SCALING
40AF	43BC	SWAP
40AF	00FF	MUTE
40AF	17E8	BRIGHTNESS
40AF	18E7	CONTRAST
40AF	1EE1	AUTO
40AF	0FF0	SOURCE
40AF	1BE4	VOLUME -
40AF	1DE2	VOLUME +

Notes

7. Specifications

	VTE-8400
PANEL	
Diagonal Size (Inch)	84"
Backlight	Edge LED
Aspect Ratio	16:9
Input Resolution	3840 x 2160 @ 60 Hz
Response Time	5 ms
Display Frame Rate	120 Hz
Brightness	350 cd/m^2
Contrast Ratio	1400:1
Viewing Angle	178º (H) / 178º (V)
Supported Colours	1.07 G colours
Display Orientation	Lanscape compatible
TOUCH SYSTEM	
Interface	2 x Touch USB
Touch	High-resolution infrared touch; Up to 10 points
Glass	Anti-glare, 3.0 mm Chemically-strengthened Hony AGC Glass
Supported Operating System	Windows XP / Vista / 7 / 8 / Mac OSX / Linux
AUDIO	
Built-in Speakers	4 Ω / 2 x 10W
CONNECTIVITY	
Connections	4 x HDMI / 1 x DisplayPort / 1 x VGA
Audio	Audio Out / SPDIF Out / PC Audio In
Control	IR Extender / RS232 / Ethernet / Touch USB
PHYSICAL SPECIFICATIONS	
Dimensions	1919.2 (mm) x 1108.4 (mm) x 103 (mm)
Weight	Net: 113 kg; Gross: 123 kg
Wall Mount	600mm x 400mm / 600mm x 600mm VESA,
Fanless Design	Yes
OSD FUNCTIONS	
OSD Languages	English, Slovenian, Croatian, Serbian, Hungarian, Macedonia, Bosnian
Source Auto Detect Function	Yes
OSD Key Lock Function	Yes
POWER	
Power Supply	AC100-240V (Worldwide), 6A 50/60Hz
Maximum Power Consumption	≤ 520 W
Standby	≦0.5 W
ENVIRONMENTAL	
Operating Temperature	0 °C ~ 35 °C
Storage Temperature	-20 °C ~ 60 °C
Humidity	35% ~ 85% RH

Supported Timings

Table 7-2 lists the signal types supported by each input on the display.

Table 7-2. Supported Timings By Input

Timing			fH (kHz)	fV (Hz)	Dot clock (MHz)	HDMI	VGA	DisplayPort
VESA	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
			43.269	85.008	36	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
			53.674	85.06	56.25	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
			68.677	84.997	94.5	O	O	O
	WXGA1360x768		47.712	60.015	85.5	O	O	O
	1280 x 720		44.444	59.98	64	O	O	O
			44.772	59.86	74.5	O	O	O
			56.456	74.78	95.75	O	O	O
	1280 x 768		47.776	59.87	79.5	O	O	O
			47.396	59.995	68.25	O	O	O
			68.633	84.837	117.5	O	O	O
	1280 x 800		49.306	59.91	71	O	O	O
			49.702	59.81	83	O	O	O
	SXGA	1152x864	67.5	75	108	O	O	O
		1280x1024	63.981	60.02	108	O	O	O
			79.976	75.025	135	O	O	O
			91.146	85.024	157.5	O	O	O
	1440 x 900		55.469	59.901	88.75	O	O	O
			55.935	59.88	106.5	O	O	O
	WSXGA+ 1680 x1050		64.674	59.883	119	O	O	O
			65.29	59.954	146.25	O	O	O
	UXGA 1600 x 1200		75	60	162	O	O	O
	1920 x 1080		66.587	59.93	138.5	O	O	O
	WUXA 1920 x 1200		74.038	59.95	154	O	O	O
	QHD 2560x1440		88.787	59.951	241.5	O	-	O
			89.521	59.961	312.25	-	-	O
	QSXGA 2560x1600		98.713	59.972	268.5	O	-	O
			99.458	59.987	348.5	-	-	O
EDTV	480p		31.5	60	27.03	O	-	O
	576p		31.25	50	27	O	-	O

Overall Dimensions

Figure 7-1 shows the display dimensions of VTE-8400 (all dimensions are in millimetres).

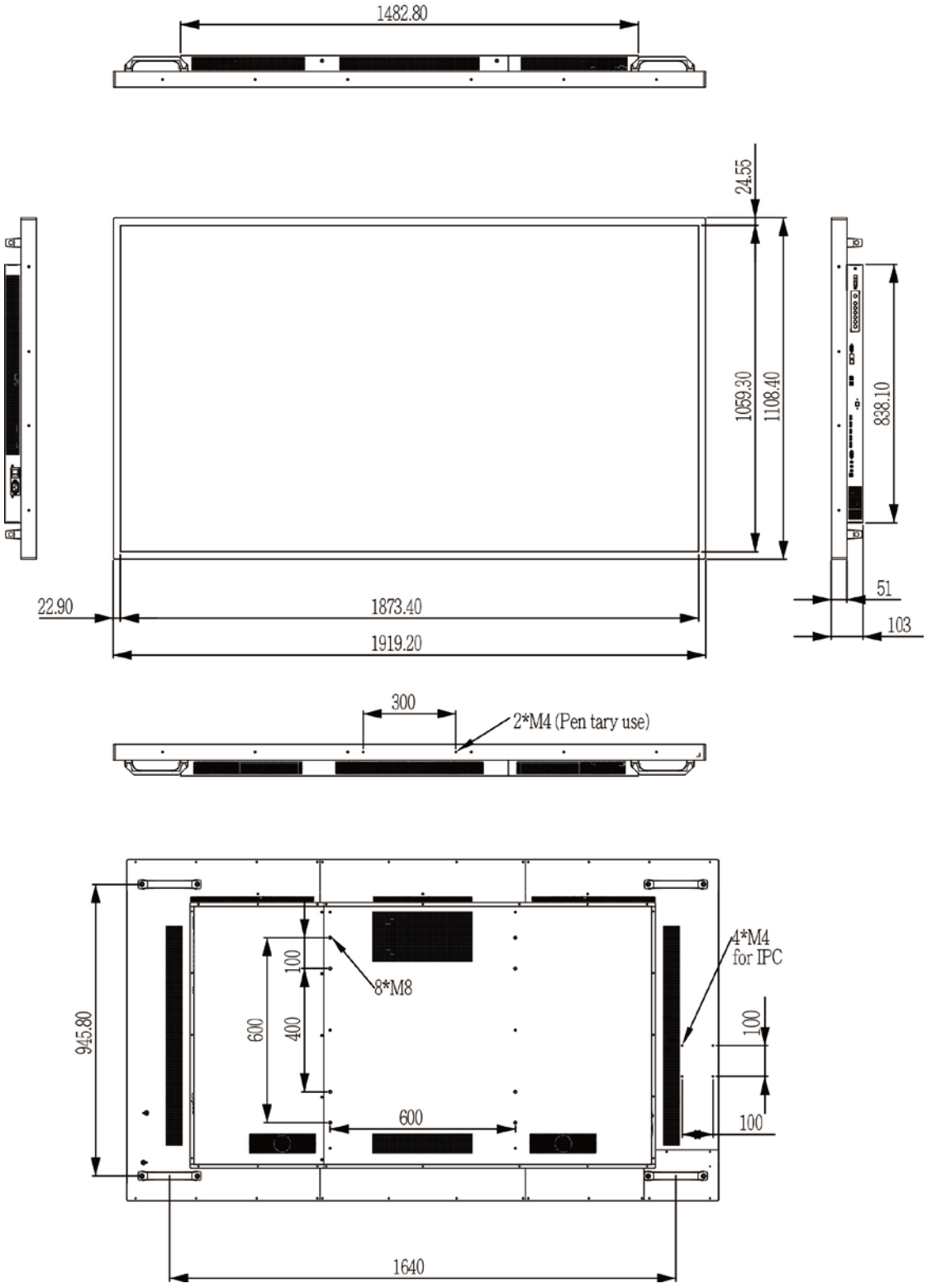


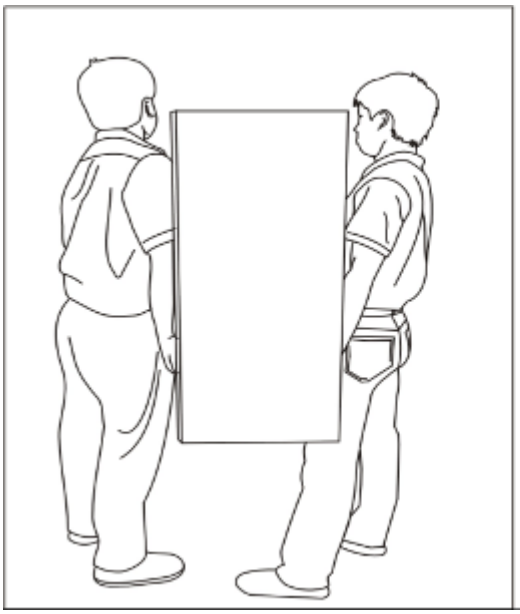
Figure 7-1. VTE-8400 Display Dimensions

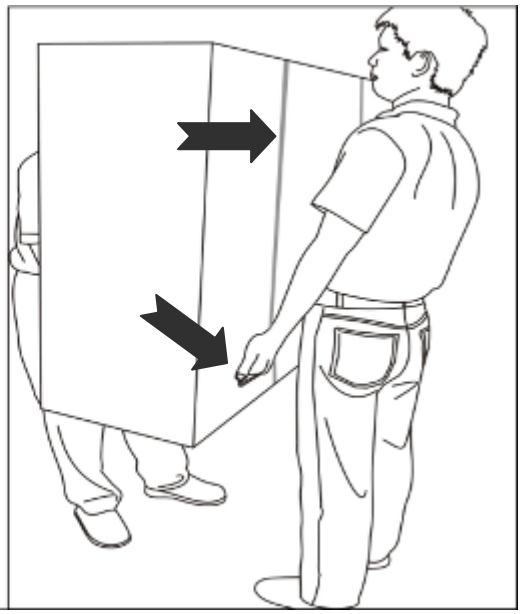
Notes

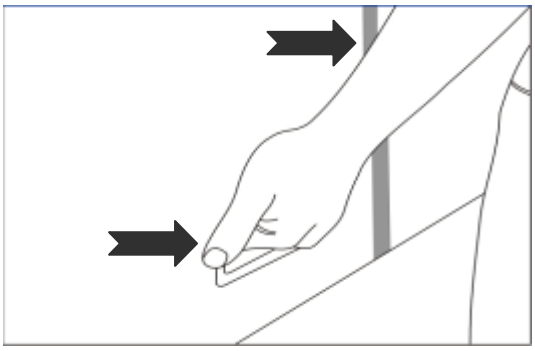
Appendix I: Moving and Carrying Notice

Moving the Display:

Moving the display requires at least two people. Attempting to move the display with one person may result in dropping the display and/or serious injury. When moving a display in its shipping carton, lift the carton using the white handles.







Carrying the display:

This display is heavy; please follow proper lifting technique, as pictured below. Failure to do so may cause injury.

Appendix II: Installing a Wall Mount

Follow the manual instructions for the type of mount you have selected. Refer all servicing to qualified service personnel.

Moving the display requires at least two people.

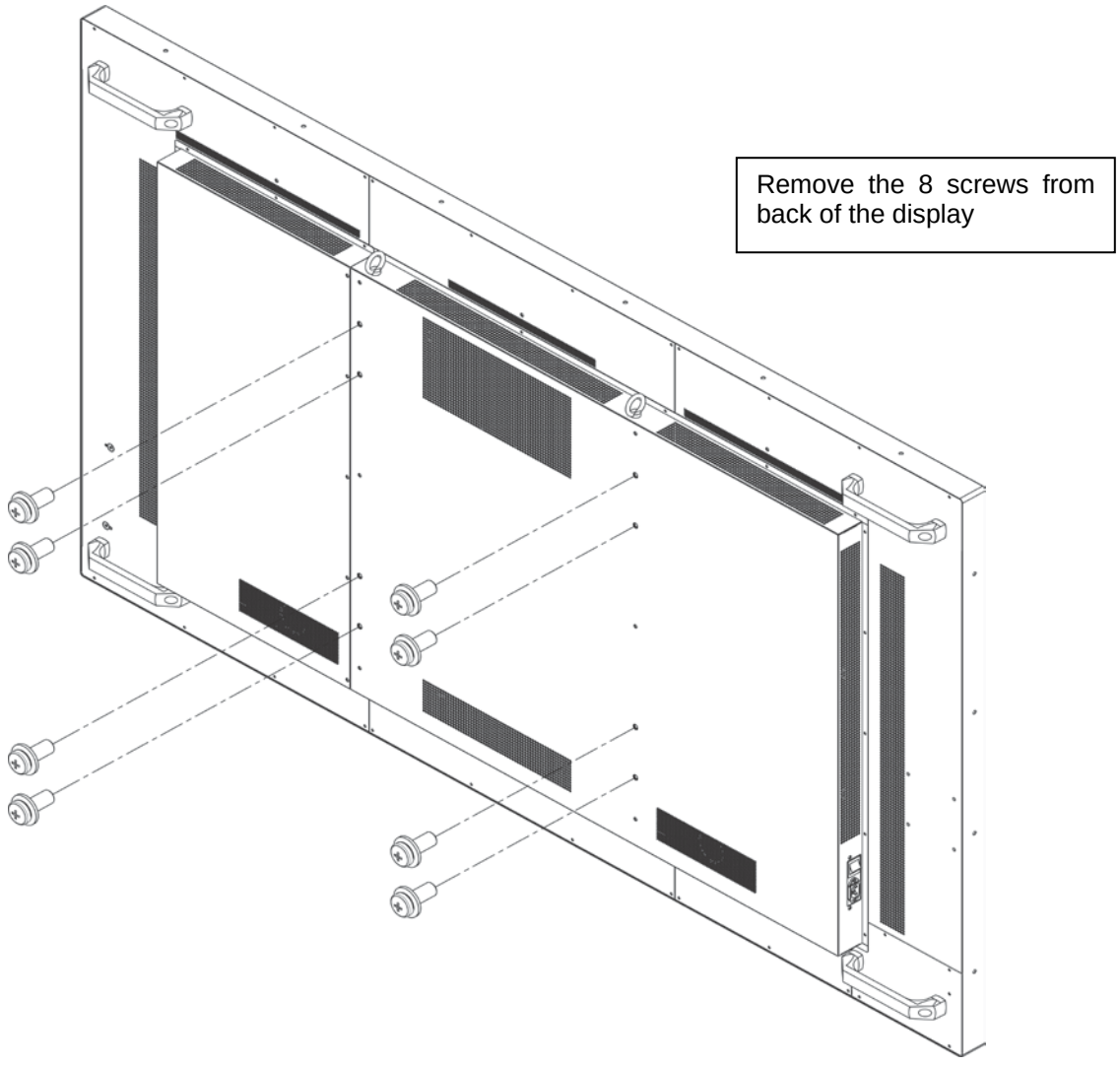
Before installing, please make sure the wall is strong enough to hold the necessary weight of the display and the mount.

Step1. Keep the display facing the ground and place it on a flat object.

Step2. Remove the 8 screws (M8*15) from the back of the display.

Step3. Align the wall brackets with the mounting holes and attach the brackets to the display using the screws removed in Step 2.

Caution: Longer screws will damage the display.



Use maximum 15mm/0.59” long screws.
8mm Metric

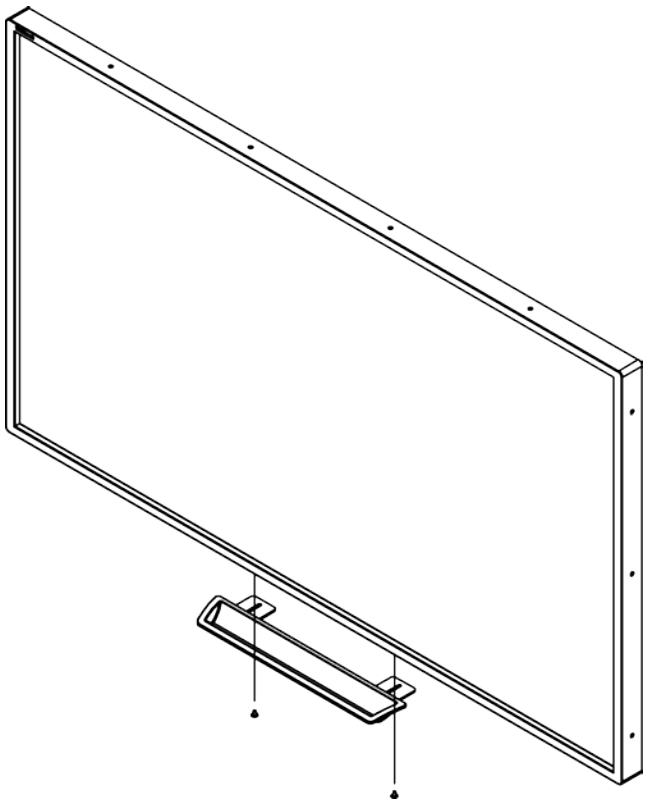
Appendix III: Installing a Pen Tray

Follow the steps below to install a pen tray.

Step1. Use a screwdriver to unscrew the two screws under the display.

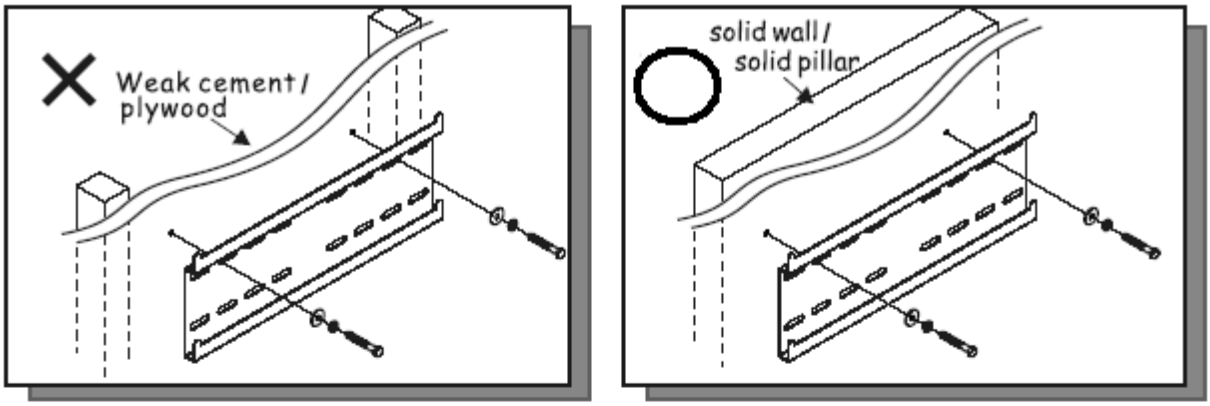
Step2. Align the pen tray with the holes that hold the screws under the display.

Step3. Screw the pen tray onto the bottom of the display using the screws that were removed earlier.

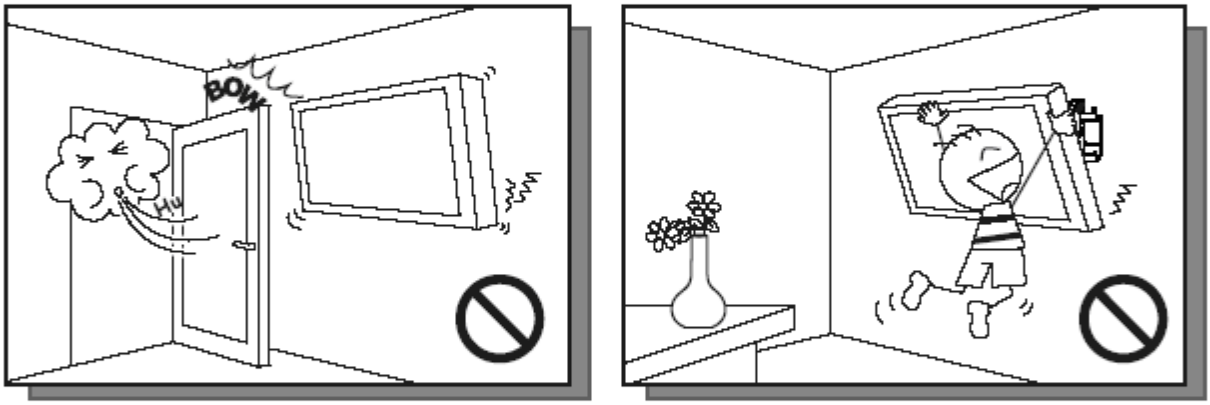


Appendix IV: Wall Mount Safety Notes

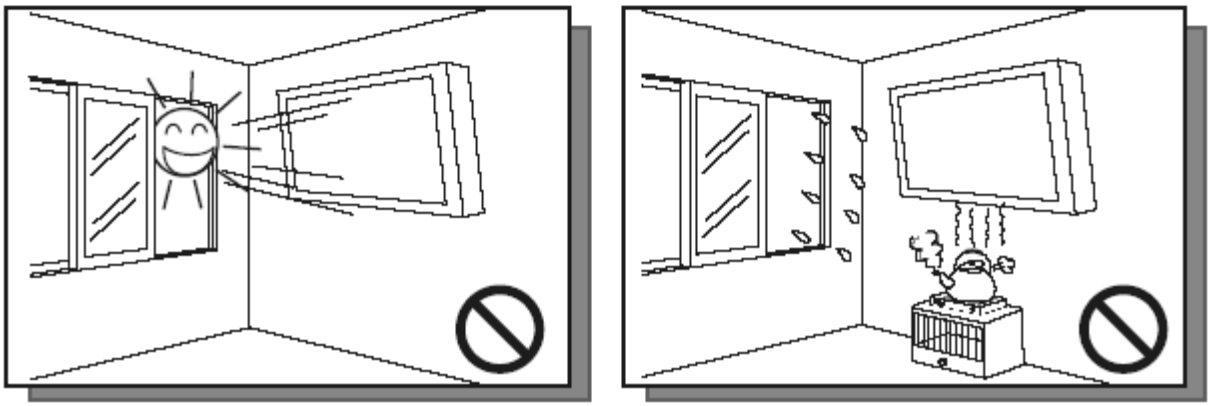
1. Please make sure if the bracket is fixed to the solid wall / solid pillar for fear of falling due to heavy weight.



2. After assembling, please don't pull or shake violently.

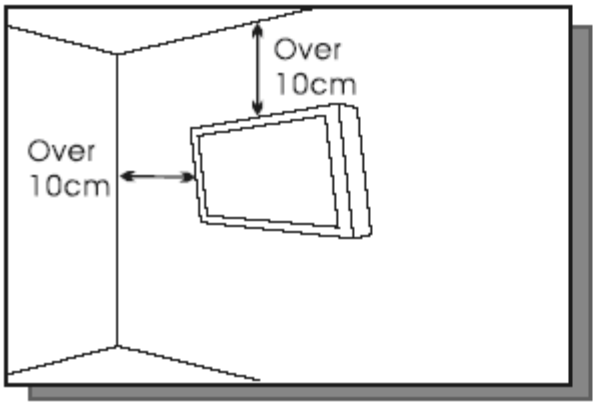


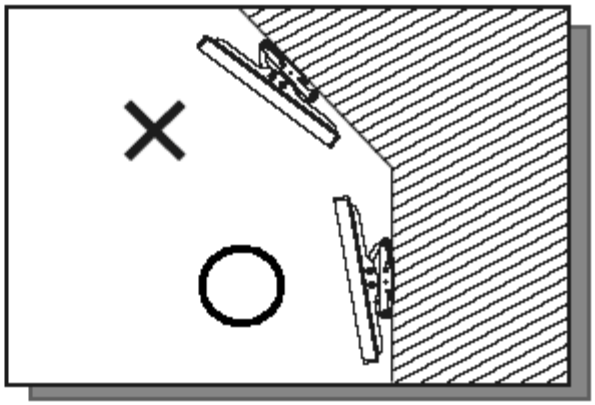
3. Please don't install the bracket directly under the sunshine or humidity / high temperature places for fear that the quality is effected.



4.

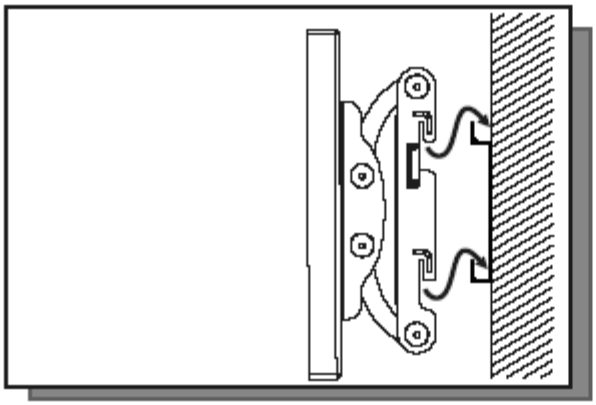
Installing the brakcet over 10 cm from each wall side and being vertical to the ground is the suggested installing position.





5.

Please make sure to hang on the mounting hooks firmly.



6.

The flat screen must be put in the mid of the bracket for fear of slope.