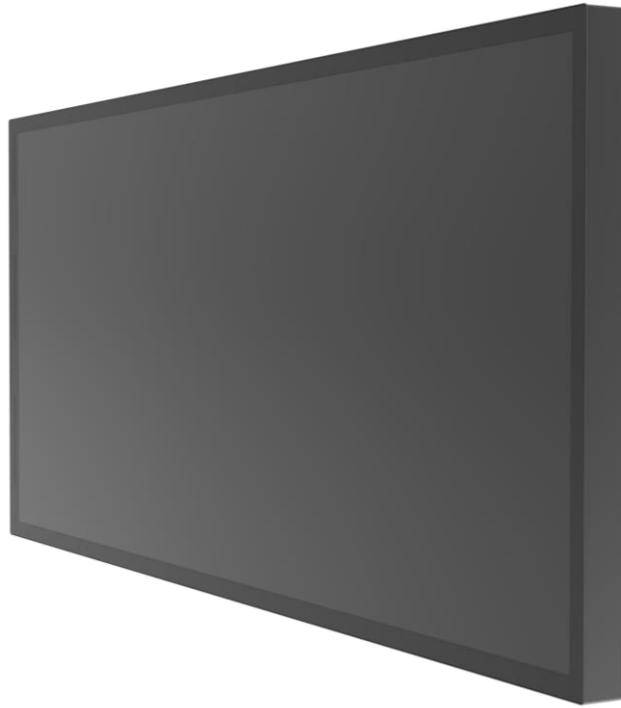# LM-5532-23 User  Manual

## Compliance Information

### For FCC (USA)

This equipment has been tested and fund to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. There 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.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### For IC (Canada)

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

### For CE (EU)

The device complies with the EMC Directive 2014/30/EU and Low Voltage Directive 2014/35/EU

Warning:

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

**Usage Notice**

> ⚠ **Warning - To prevent the risk of fire or shock hazards, and do not expose the product to moisture.**
>
> ⚠ **Warning - Please do not open or disassemble the product as this may cause electric shock.**
>
> ⚠ **Warning - Power cord shall be connected to a socket-outlet with earthing connection.**
>
> ⚠ **Warning - The cable cover cannot be removed under normal use conditions.**
>
> ⚠ **Warning - Stability Hazard. The touch monitor may fall, causing serious personal injury or death. To prevent injury, this touch monitor must be securely attached to the wall in accordance with the installation instructions.**

**Precautions**

Please follow all warnings, precautions and maintenance as recommended in this user's manual to maximize the life of your unit.

*Do：*

- Turn off the product before cleaning.

- Use a soft cloth moistened with mild detergent to clean the product housing.

- Use only the qualified power adapter that comes with your device.

- Disconnect the power plug from AC outlet if the product is not going to be used for an extended period of time.

*Don't：*

- Do not use abrasive cleaners, waxes or solvents for your cleaning.

- Do not operate the product under the following conditions:

    - Extremely hot, cold or humid environment.

    - Areas susceptible to excessive dust and dirt.

    - Near any appliance generating a strong magnetic field.

# Table of Contents

# Chapter 1

Product Introduction

## 1.1 Overview

The LM-5532-23 PCAP Multi-Touch Monitor uses a (TFT) liquid crystal display (LCD).This unit is to be used as commercial and light industrial equipment only.
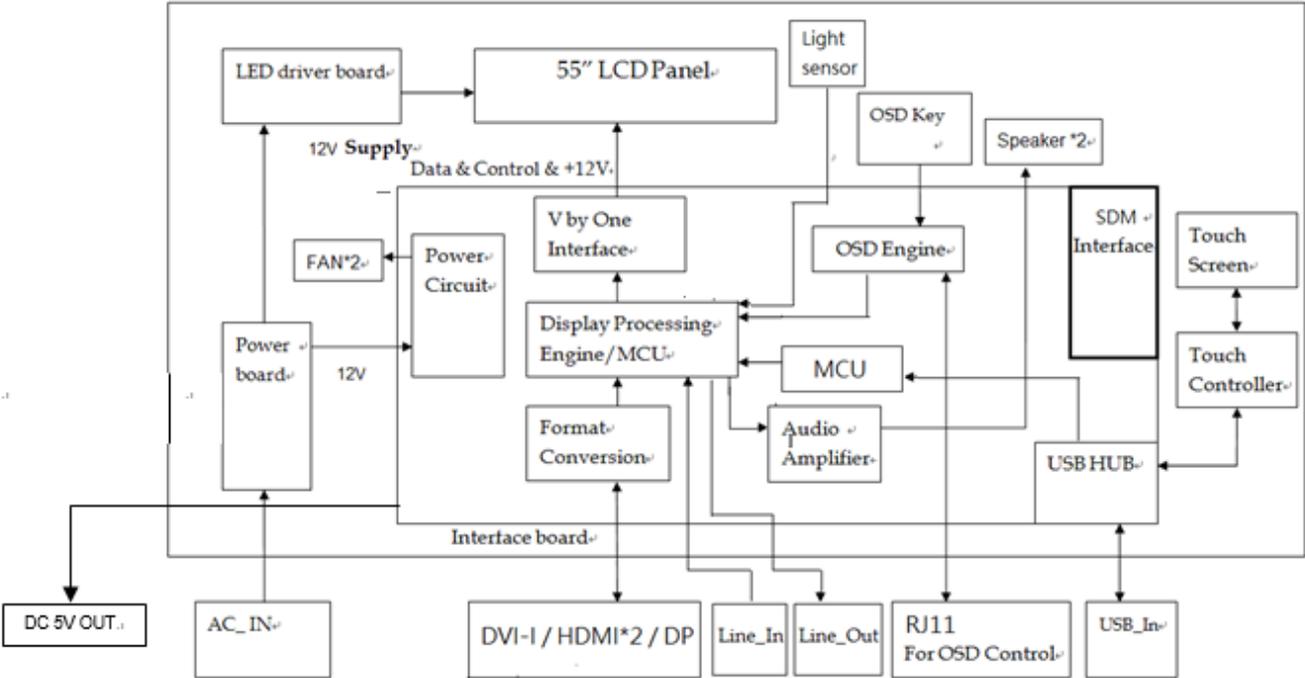
## 1.2 Feature

- 4K High Resolution Display
- Dynamic Touch Sensitivity Technology
- Portrait and Landscape Display for All Solutions
- Touch Screen Support up to 40 Points Touch
- Supports 24/7 non-stop Operate Service
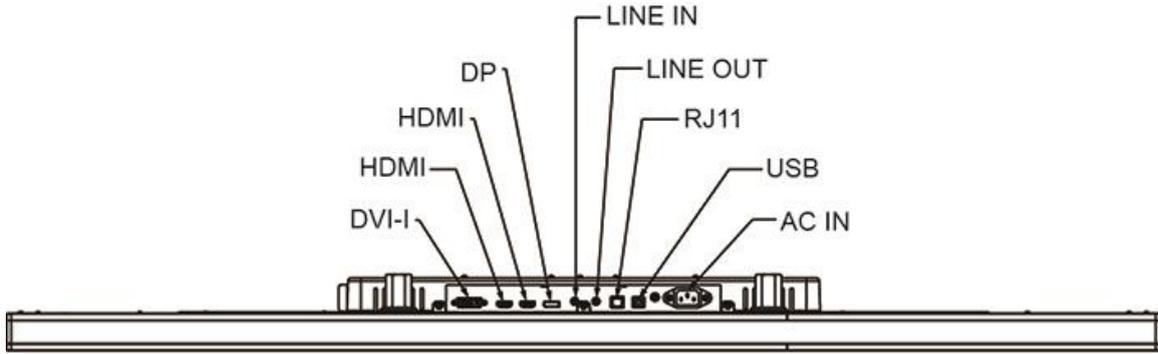
## 1.3 Specifications

| LCD Touch Panel | |
|---|---|
| Size | 55" TFT LCD |
| Brightness | 500 cd/m$^2$ (Non-touch screen)<br>425 cd/m$^2$ (P-CAP) |
| Number of Pixels | 3840(H) x 2160(V) |
| Touch Type | P-CAP/ 40 points |
| **Environment** | |
| Power Input | AC 100-240V ~ 1.8-0.8A 50-60Hz |
| Power Output | 5VDC, 2A |
| Operating Temperature | 0°C ~ 40°C |
| Storage Temperature | -20°C ~ 60°C |
| Operating Humidity | 20% ~ 80% RH, non-condensing |
| Mounting | VESA 400 mm x 400 mm |
| Dimension (W x H x D) | 1247.6mm x 82.3mm x 732.4mm |
| Net Weight | 30.75 |
| Gross Weight | 37.21 |

# 1.4 Block Diagram

This section describes the electrical requirements of the monitor. The block diagram in figure 1 illustrates the various electrical sub-systems.

| LED driver board | 55" LCD Panel | Light sensor | | |
|---|---|---|---|---|

**12V Supply**
Data & Control & +12V

FAN*2 — Power Circuit — V by One Interface — OSD Engine — OSD Key — Speaker *2 — SDM Interface — Touch Screen

Power board — 12V — Display Processing Engine/MCU — MCU — Touch Controller

Format Conversion — Audio Amplifier — USB HUB

Interface board

DC 5V OUT | AC_IN | DVI-I / HDMI*2 / DP | Line_In | Line_Out | RJ11 For OSD Control | USB_In
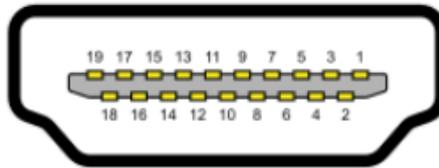
## 1.5 Interface Connectors



### 1.5.1 Power Connector

The AC converter shall have an IEC320 type male power receptacle for connection to AC mains power. The power cord, exact type to be supplied in the appropriate Option Kit, shall be length of 1.8 ±0.05 meters, and PC99 compliant.

### 1.5.2 Video Signal Connector



**HDMI1 (HDMI 2.0) & HDMI2 (HDMI 1.4)**
The video signal input via HDMI female connector.
Connector Pin Assignment:

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1 | TMDS Data2+ | 11 | TMDS Clock Shield |
| 2 | TMDS Data2 Shield | 12 | TMDS Clock– |
| 3 | TMDS Data2– | 13 | CEC |
| 4 | TMDS Data1+ | 14 | Reserved (N.C. on device) |
| 5 | TMDS Data1 Shield | 15 | SCL |
| 6 | TMDS Data1– | 16 | SDA |
| 7 | TMDS Data0+ | 17 | DDC/CEC Ground |
| 8 | TMDS Data0 Shield | 18 | +5V Power |
| 9 | TMDS Data0– | 19 | Hot Plug Detect |
| 10 | TMDS Clock+ | | |
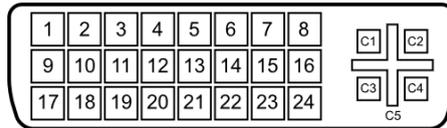
**DVI-I**

| Pin | Signal | Pin | Signal | Pin | Signal |
|---|---|---|---|---|---|
| 1 | TMDS Data 2- | 9 | TMDS Data 1- | 17 | TMDS Data 0- |
| 2 | TMDS Data 2+ | 10 | TMDS Data 1+ | 18 | TMDS Data 0+ |
| 3 | TMDS Data 2/4 Shield | 11 | TMDS Data 1/3 Shield | 19 | TMDS Data 0/5 Shield |
| 4 | TMDS 4- | 12 | TMDS 3- | 20 | TMDS Data 5- |
| 5 | TMDS 4+ | 13 | TMDS 3+ | 21 | TMDS Data 5+ |
| 6 | DDC Clock | 14 | +5V DDC Power | 22 | TMDS Clock Shield |
| 7 | DDC Data | 15 | Gnd (+5, Analog V/H Sync) | 23 | TMDS Clock+ |
| 8 | Analog vertical sync | 16 | Hot Plug Detect | 24 | TMDS Clock- |
| C1 | Analog red | C2 | Analog green | C3 | Analog blue |
| C4 | Analog horizontal sync | C5 | Analog ground Return for R , G , B signals | | |
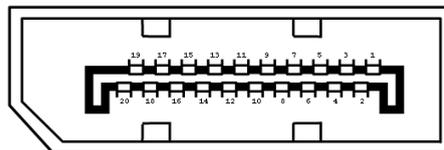


**Display Port(1.2a)**

| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | ML_Lane 3(n) Data3 - | 11 | Signal ground |
| 2 | Signal ground | 12 | ML_Lane 0(p) Data0 + |
| 3 | ML_Lane 3(p) Data3 + | 13 | Signal ground |
| 4 | ML_Lane 2(n) Data2 - | 14 | Signal ground |
| 5 | Signal ground | 15 | AUX_CH(p) AUX + Signal for Auxiliary Channel |
| 6 | ML_Lane 2(p) Data2 + | 16 | Signal ground |
| 7 | ML_Lane 1(n) Data1 - | 17 | AUX_CH(n) AUX - Signal for Auxiliary Channel |
| 8 | Signal ground | 18 | Hot Plug |
| 9 | ML_Lane 1(p) Data1 + | 19 | DP_PWR Return |
| 10 | ML_Lane 0(n) Data0 - | 20 | DP_PWR |

## 1.5.3 Signal Connector
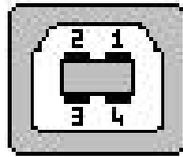


**USB Connector**

| Pin | Signal |
|-----|--------|
| 1 | VCC |
| 2 | D- |
| 3 | D+ |
| 4 | GND |
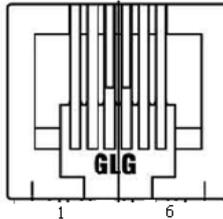


**RJ11 Connector (Remote Key)**

| Pin | Signal |
|-----|--------|
| 1 | MENU |
| 2 | UP |
| 3 | DOWN |
| 4 | SELECT |
| 5 | POWER |
| 6 | GND |
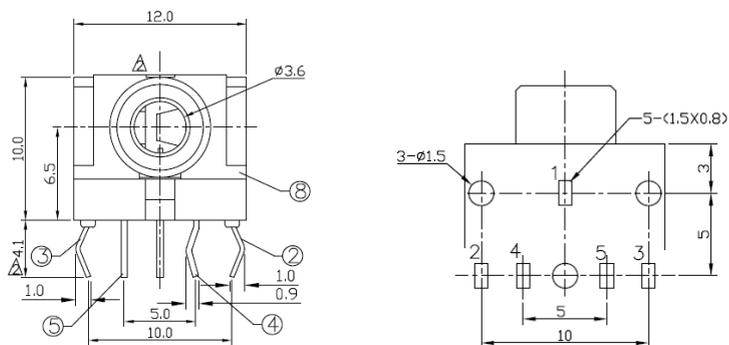


**Audio Line in / Line out connector**

## 1.6 Package Overview
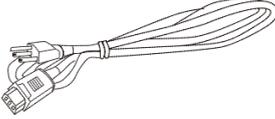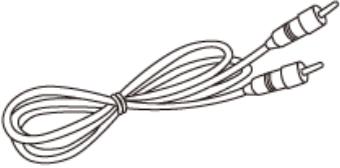
| | | |
|---|---|---|
|  |  |  |
| LCD Display | Power Cord | Audio cable |
|  |  |  |
| USB Cable (A to B) | HDMI Cable | DVI to VGA cable |
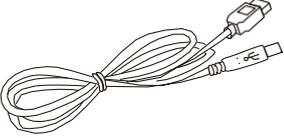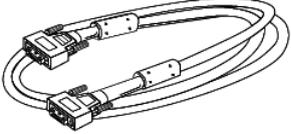
⚠ *__Warning!__*

*__This product is intended to be supplied by a AC-in Power source, rated 100V~240V, 1.8~0.8A 50/60Hz minimum, Tma = 40 degree C minimum, and the altitude of operation = 5000m minimum.__*
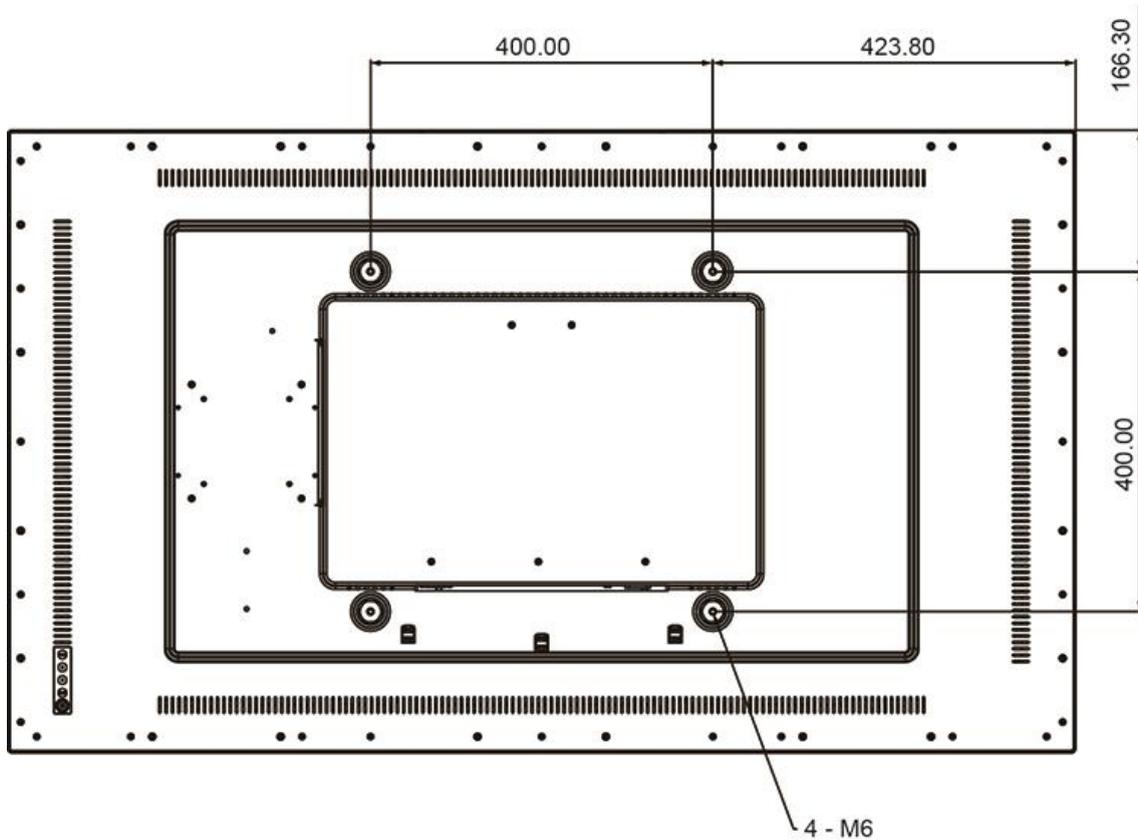
# Chapter 2

## Product Installation

## 2.1 About VESA Mount

The LM-5532-23 Monitor conforms to the "VESA Flat Display Mounting Interface Standard" which defines a physical mounting interface for touch monitor and corresponding with the standards of touch monitor mounting devices. The VESA mount is located on the back of this unit.



⚠️ **_Warning!_**

**_The distance between the back cover surface and the bottom of the screw hole is 6~7mm. Please use M6/8mm screw nut diameter with proper length to mount your monitor._**

**_Note: The mounting stand must be able to support at least 33 lbs (15.0 Kg)._**

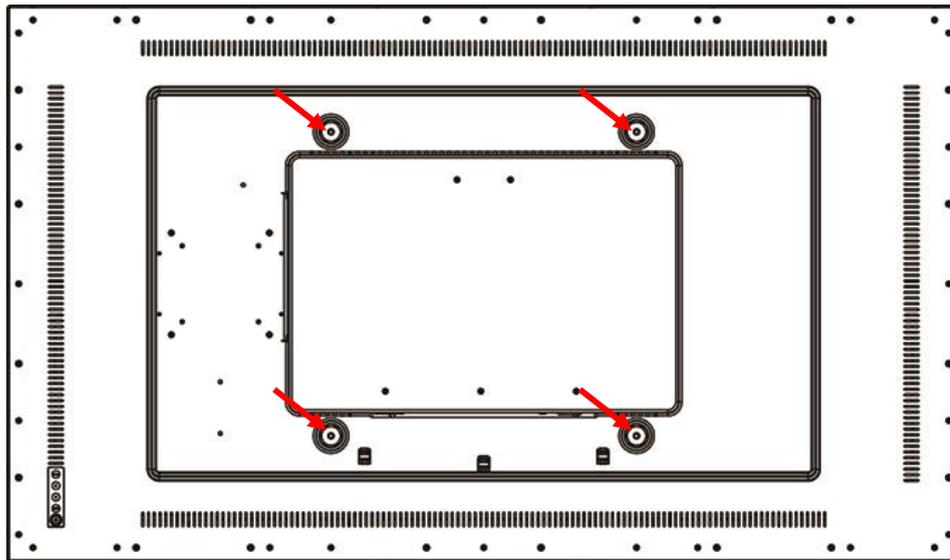### 2.1.1 Install the VESA screw

Note: Please install/ dismantle the product when the device is in the shutdown state.

Step 1: Fasten four screw nut into the VESA hole

The specification of the screw nut is M6 x 8mm, the length of nut is 43mm
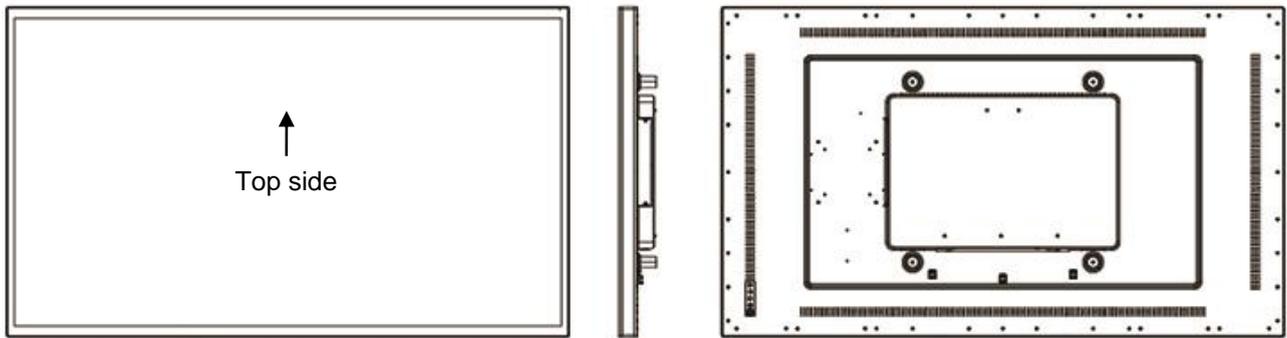
Step 2: Fasten four M6 screws into the screw nut

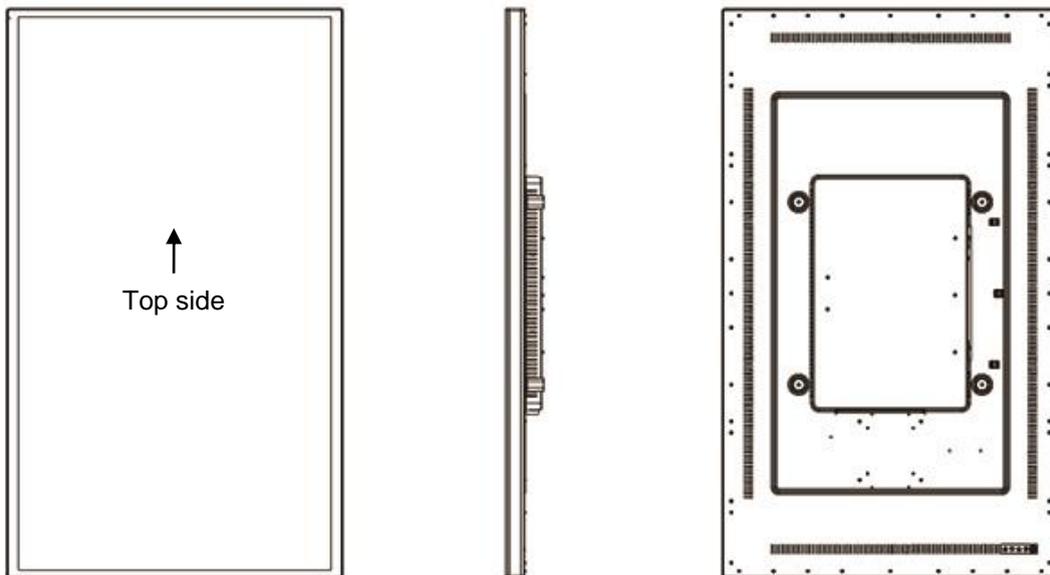The specification of the screw is M6 x 30mm

## 2.2 About General Mounting Information

The following two mounting orientations are supported: Landscape and portrait mode. For optimal touch performance, ensure that the monitor is supported fully and is as flat as possible.
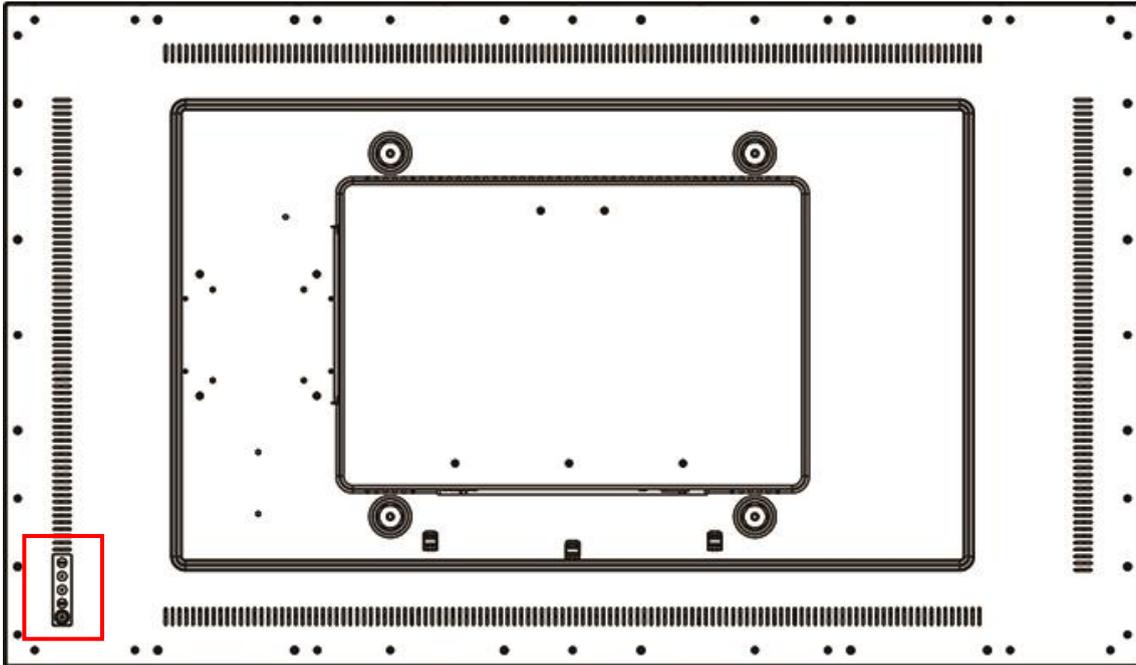
### 2.2.1 Landscape



### 2.2.2 Portrait

## 2.3 On-Screen Display



The LM-5532-23 Monitor has side OSD controls. The following is OSD function table:

| OSD / Key | Menu off status | Menu on status |
|---|---|---|
| MENU | Menu appear | Menu disappear/ return to main item |
| ▲ | N/A | Main item select up/ Adjust up |
| ▼ | N/A | Main item select down/ Adjust down |
| SELECT | N/A | Enter/Select sub-item function |
| ⏻ | Power On/Off | |

1.  Press the "MENU" button to pop up the "on-screen menu" and press "Up" or "Down" button to select among the five functions in the main menu.
2.  Choose the sub-menu page by pressing the "SELECT" button, and press "Up" or "Down" button to select the adjustment items in the sub-menu.
3.  Pressing "SELECT" button for the selected adjustment items, and adjust the value by pressing the "Up" or "Down" button.
4.  With the OSD menu on screen, press "Menu" button to return main menu or exit OSD.
5.  The OSD menu will automatically close, if you have left it idle for a pre-set time.

## 2.3.1 OSD Function Description

| Item | Content | Default |
|------|---------|---------|
| Contrast | The monitor luminance level control. | 50 |
| Brightness | The monitor backlight level control. | 100 |
| Auto Adjust | Fine-tune the image to full screen automatically. | NA |
| Left/Right | Moving screen image horizontal position to left or right. | NA |
| Up/Down | Moving screen image vertical position to up or down. | NA |
| Horizontal size | The screen image horizontal dot clock adjustment. | NA |
| Fine | The screen image pixel phase adjustment. | NA |
| OSD Left/Right | Moving OSD menu horizontal position to left or right. | 50 |
| OSD Up/Down | Moving OSD menu vertical position to up or down. | 50 |
| OSD Time out | OSD auto-disappear time selection. | 15 |
| OSD Language | OSD menu language selection. ( English, French, Japanese, Deutsch, Spanish, Italian, Traditional Chinese and Simplified Chinese) | English |
| Factory Reset | Factory default value restored. | NA |
| RGB | Color temperature selection. (9300K, 6500K, 5500K, 7500K, User) | User |
| Volume | Audio volume adjustment. | 50 |
| Mute | Audio On/Off control. | Off |
| Input select | Input select function. (Auto, DVI-A, DVI-D, HDMI1, HDMI 2, DP, SDM) | Auto |

## 2.3.2 Timing Table Chart

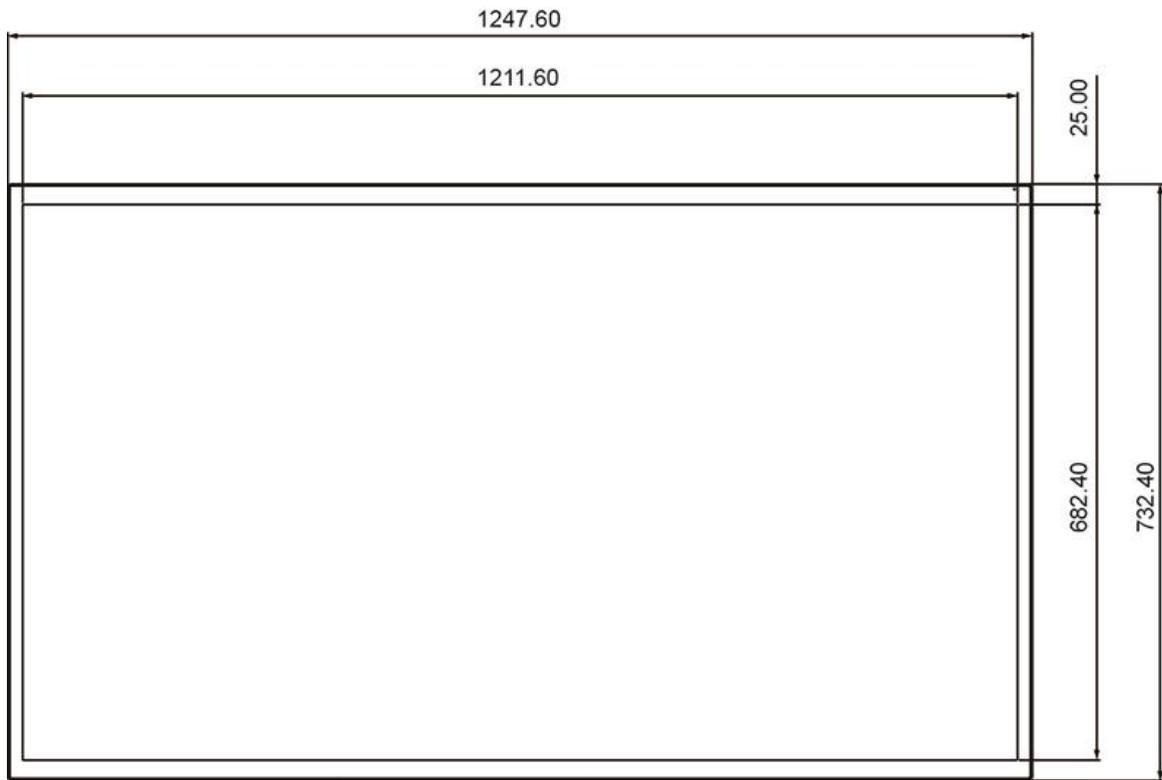| Mode | Resolution | H-Freq. (KHz) | Band Width (MHz) | Polarity | |
|---|---|---|---|---|---|
| | | | | H | V |
| 1 | VGA 640x480 60Hz | 31.47 | 25.175 | - | - |
| 2 | VESA 800x600 60Hz | 37.88 | 40 | + | + |
| 3 | VESA 1024x768 60Hz | 48.36 | 65 | - | - |
| 4 | VESA 1280x720 60Hz | 44.772 | 74.5 | - | + |
| 5 | VESA 1280x768   60Hz | 47.776 | 79.5 | - | + |
| 6 | VESA 1280x1024 60Hz | 64 | 108 | + | + |
| 7 | VESA 1280x960 60Hz | 60 | 108 | + | + |
| 8 | VESA 1440x900 60Hz | 56 | 106.5 | - | + |
| 9 | VESA 1360x768 60Hz | 47.712 | 85.5 | + | + |
| 10 | VESA 1680x1050 60Hz | 65.2 | 146 | - | + |
| 11 | FHD 1920x1080 60Hz | 67.5 | 148.5 | + | + |
| 12 | WQHD 2560x1440 60Hz(RB) | 88.787 | 241.5 | + | - |
| 13 | UHD 3840x2160 30Hz | 67.5 | 297 | + | + |
| 14 | UHD 3840x2160 60Hz | 135 | 594 | + | + |

## 2.3.3 EDID Data

**DVI-A.DVI-D**
The monitor assembly shall provide a display communications channel that conforms to VESA DDC2B hardware requirements. This configuration shall contain the 128-byte EDID file as specified by VESA EDID Standard.

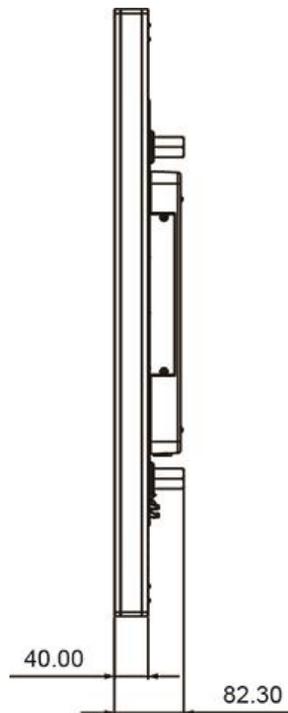**HDMI1 (HDMI 2.0) & HDMI2 (HDMI 1.4) & DP**
The monitor assembly shall provide a display communications channel that conforms to VESA DDC2B hardware requirements. This configuration shall contain the 256-byte EDID file as specified by VESA EDID Standard

## 2.4 Dimension

### 2.4.1 Front View



### 2.4.2 Side View

## 2.4.3 Rear View

20 - M4 for side mount

150.00    400.00    423.80    166.30

400.00

150.00

4 - M6

LINE IN

DP    LINE OUT

HDMI    RJ11

HDMI    USB

DVI-I    AC IN