

USER'S MANUAL

MX100 Series Monitor Module



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Prefaces

Revision

Revision	Description	Date
1.0	Manual Released	2016/09/30
1.1	Switches Definition Revised	2018/10/09

Disclaimer

All specifications and information in this User's Manual are believed to be accurate and up to date. C&T Solution Inc. does not guarantee that the contents herein are complete, true, accurate or non-misleading. The information in this document is subject to change without notice and does not represent a commitment on the part of C&T Solution Inc.

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Environmental Protection Announcement

Do not dispose this electronic device into the trash while discarding. Please recycle to minimize pollution and ensure environment protection.



Safety Precautions

Before installing and using the equipment, please read the following precautions:

- Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
- The power outlet shall be installed near the equipment and shall be easily accessible.
- Turn off the system power and disconnect the power cord from its source before making any installation. Be sure both the system and the external devices are turned OFF. Sudden surge of power could ruin sensitive components. Make sure the equipment is properly grounded.
- When the power is connected, never open the equipment. The equipment should be opened only by qualified service personnel.
- Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
- Disconnect this equipment from the power before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
- Avoid the dusty, humidity and temperature extremes.
- Do not place heavy objects on the equipment.
- If the equipment is not used for long time, disconnect it from the power to avoid being damaged by transient over-voltage.
- The storage temperature shall be above -20°C and below 80°C.
- The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.
- If one of the following situation arises, get the equipment checked by service personnel:
 - The power cord or plug is damaged.
 - Liquid has penetrated into the equipment.
 - The equipment has been exposed to moisture.
 - The equipment does not work well or it cannot work according to the user's manual.
 - The equipment has been dropped and damaged.
 - The equipment has obvious signs of breakage.

Technical Support and Assistance

1. Visit the C&T Solution Inc website at www.candtsolution.com where you can find the latest information about the product.
2. Contact your distributor, our technical support team or sales representative for technical support if you need additional assistance. Please have following information ready before you call:
 - Model name and serial number
 - Description of your peripheral attachments
 - Description of your software (operating system, version, application software, etc.)
 - A complete description of the problem
 - The exact wording of any error messages

Conventions Used in this Manual



WARNING

This indication alerts operators to an operation that, if not strictly observed, may result in severe injury.



CAUTION

This indication alerts operators to an operation that, if not strictly observed, may result in safety hazards to personnel or damage to equipment.



NOTE

This indication provides additional information to complete a task easily.

Package Contents

Before installation, please ensure all the items listed in the following table are included in the package.

Item	Description	Q'ty
1	MX100 Seris Monitor Module	1
2	USB Cable	1
3	VGA Cable	1
4	Screw Pack	1

Note: Notify your sales representative if any of the above items are missing or damaged.

Ordering Information

Model No.	Product Description
MX100	Monitor Module with 1x VGA Input, 1x DVI-D Input, 1x DP Input, 1x USB 2.0 Input

Optional Accessories

Model No.	Product Description
1-E09A06007	Adapter AC/DC 12V 5A 60W with 3pin Terminal Block Plug 5.0mm Pitch
SFICBL022	Power Cord, 3-pin US Type, 180cm
1-TPCD00002	Power Cord, European Type, 180cm
1-TPCD00001	Power Cord, 3-pin UK Type, 180cm

Chapter 1

Product Introductions

1.1 Overview

The MX100 series monitor module featuring with flat surface, IP 65 dust/waterproof front panel, and aluminum die-casting front frame with rugged body structure, it is rugged and reliable for industrial environment. By supporting Multi-Mode Display Module (MDM) technology, enabling MX100 series monitor module to configure, upgrade and maintain easily.

The MX100 series supports both digital and analog signal input via three types of display interface: VGA, DVI-D and DisplayPort. Touch screen can be connected with USB or COM port. It also has multi-language OSD function for adjusting the view options of display. In addition, supporting wide range power input from 9 to 48VDC and high reliability even operating in temperature extremes, MX100 is designed as an ideal solution for industrial application.

Featuring with completely cable-less designed and high functional, MX100 series are ruggedized display systems that can operate in harsh environments and easy to install and maintain. A build in over voltage protection (OVP), over current protection (OCP), reserve protection, and wide range DC power input makes MX100 series are safety system for all industrial applications.



1.1.1 Key Features

- 1x VGA input
- 1x DVI-D input
- 1x DisplayPort input
- 1x USB 2.0 input
- 1x COM Port input
- 1x Audio input
- 9 to 48VDC wide range power input
- -10°C to 60°C extended operating temperature

1.2 Hardware Specification

I/O

- 1x VGA Input
- 1x DVI-D Input
- 1x DisplayPort Input
- 1x Audio Input
- 1x USB 2.0 Input
- 1x COM Port Input (Resistive Touch Only) (USB & COM port are reserved for the connection to enable touch usage only)

Power

- 1x 3-pin Terminal Block Connector with Power Input 9~48VDC
- Power Ignition Sensing
- 1x Optional AC/DC 12V/5A, 60W Power Adapter
- Power Protection
 - ✓ OVP (Over Voltage Protection)
 - ✓ OCP (Over Current Protection)
 - ✓ Reserve Protection

Environment

- Operating Temperature: Ambient with Air Flow: -10°C to 60°C (with Industrial Grade Peripherals)
- Storage Temperature: -20°C to 70°C
- Relative humidity: 10%~95% (non-condensing)

Physical

- Dimension: 246 (W) x 220 (D) x 42 (H) mm
- Weight: 1.31kg
- Construction: Extruded Aluminum with Heavy Duty Metal
- Mounting: VESA Mounting Holes 75 x 75mm, 100 x 100mm

Certifications

- CE
- FCC Class A

1.3 System I/O

1.3.1 Rear

DC IN

Used to plug a DC power input with terminal block.

DVI-D

This 24-pin port is for PC (Personal Computer) DVI-D digital signal connection.

VGA

Use the rear panel standard 15-pin female VGA connector to connect the monitor to the system graphics interface.

DisplayPort

The DisplayPort connector connects to a display device with DisplayPort interface.

COM Port for Touch Panel Connector (Resistive Touch Only)

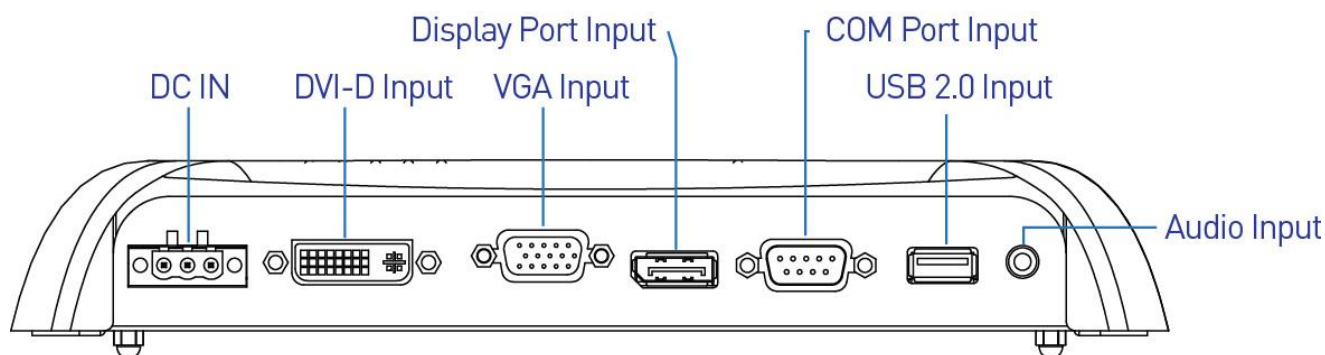
Use the rear panel female DB-9 touch panel connector to connect the monitor to the system interface.

USB for Touch Panel Connector

Use the rear panel standard USB touch panel connector to connect the monitor to the system interface.

Audio-in

This port connects PC audio source by the bundled audio cable.



1.3.3 Side (Right)

PC/CAR mode select switch

Used to select PC or CAR power mode

Power LED

Indicates the power status of the monitor.

12V/24V mode select switch

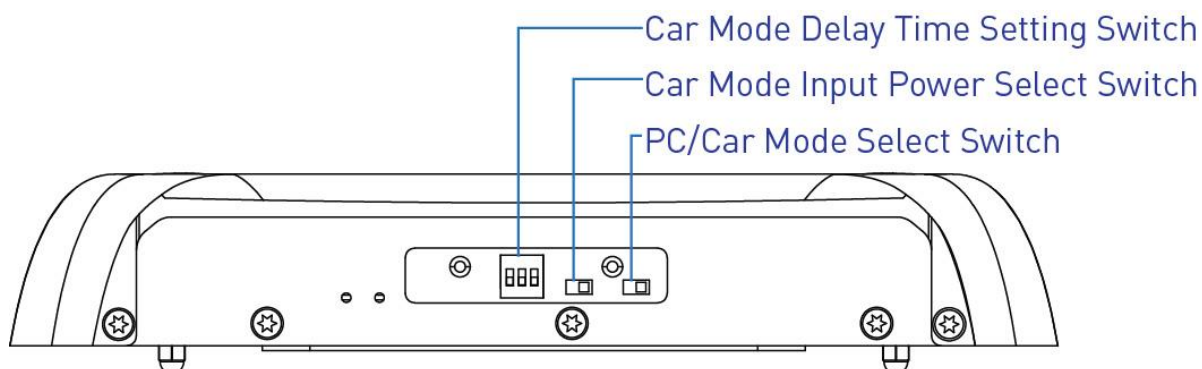
Used to select 12V or 24V Car power input voltage

Stand by LED

Indicates the standby mode of the monitor.

DELAY TIME switch

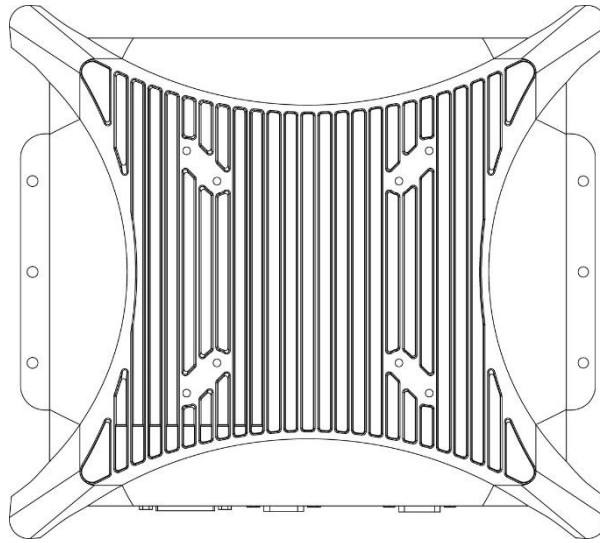
Used to select Car power turn off delay-time



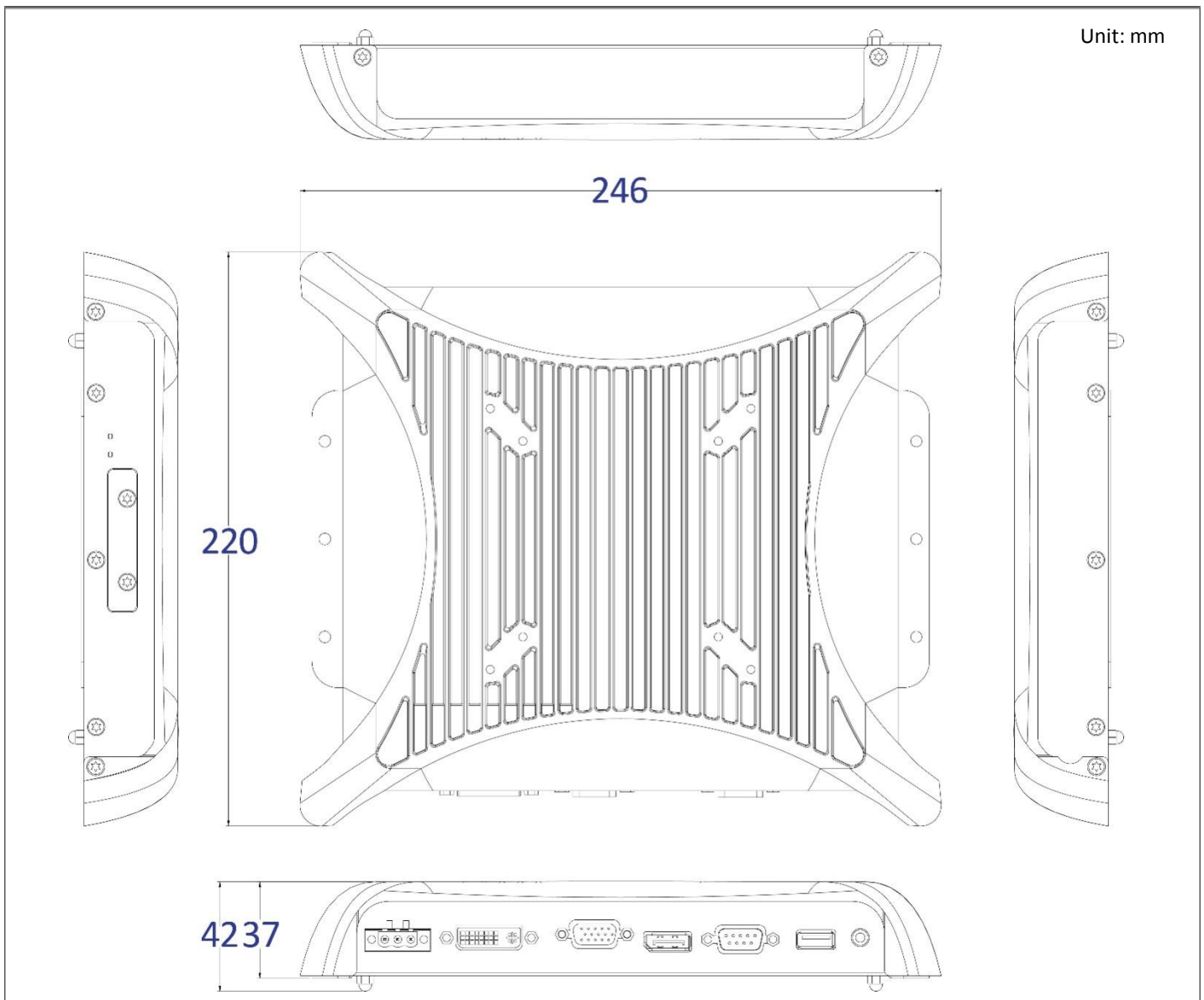
1.3.3 Top

VESA Mounting Hole

These are mounting holes for VESA mount (75x75mm and 100x100mm)



1.4 Mechanical Dimensions

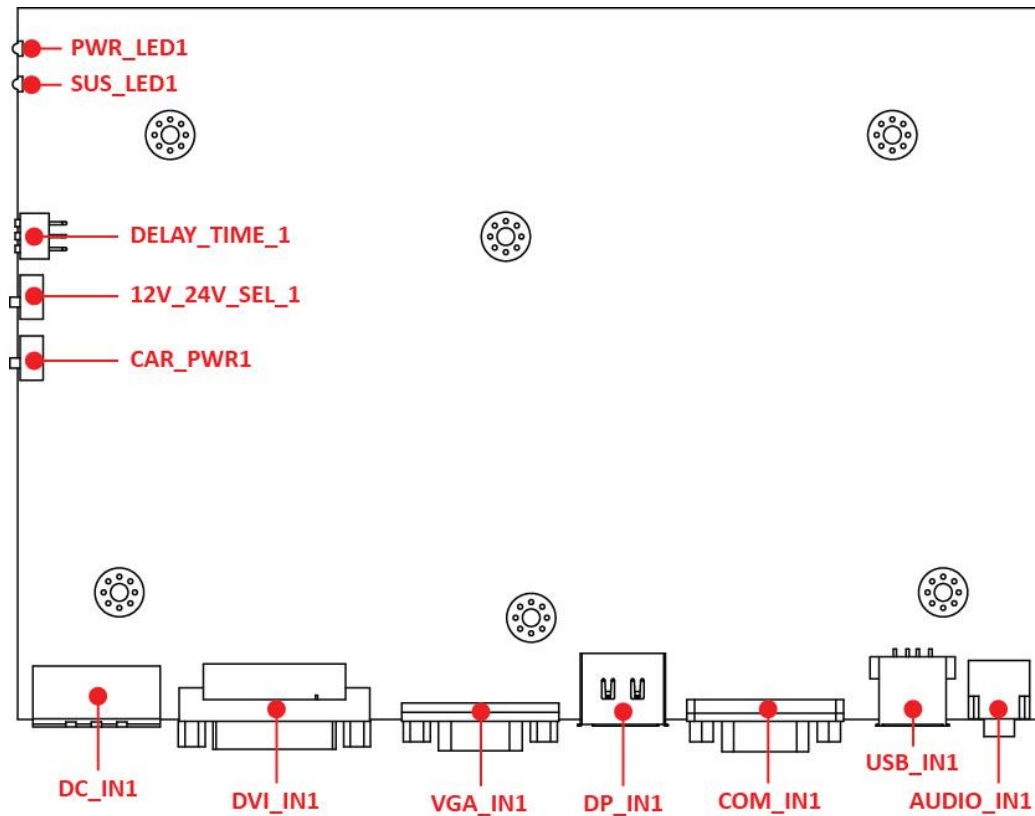


Chapter 2

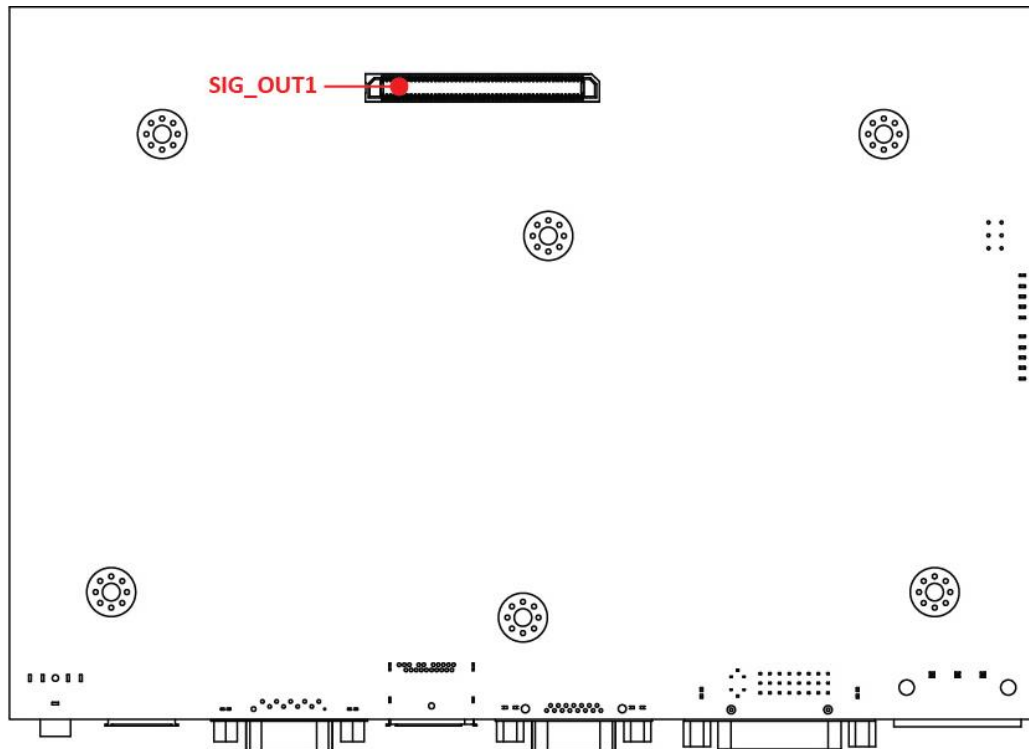
Switches and Connectors

2.1 Switch and Connector Locations

2.1.1 Top View



2.1.2 Bottom View



2.2 Connector / Switch Definition

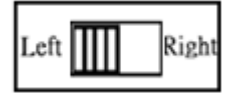
List of Connector / Switch

Connector Location	Definition
DC_IN1	3-pin DC 9~48V Power Input Connector
DVI_IN1	DVI-D Input Connector
VGA_IN1	VGA Input Connector
DP_IN1	DisplayPort Input Connector
COM_IN1	COM Port Input Connector
USB_IN1	USB 2.0 Input Connector
AUDIO_IN1	Audio Input Connector
CAR_PWR1	General/CAR Power Mode Switch
12-24V_SEL1	Car Power input voltage Switch
DELAY_TIME1	Car power turn off delay time Switch
PWR_LED1	Backlight Power LED Status
SUS_LED1	Backlight Suspend LED Status

2.3 Switches Definitions

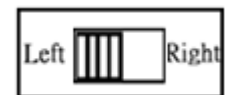
CAR_PWR1: General / CAR Power Mode Switch

Switch	Definition
1-2 (Left)	PC Power Mode (Default)
2-3 (Right)	CAR Power Mode



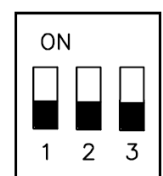
12-24V_SEL1 : Car Power input voltage Switch

Switch	Definition
1-2 (Left)	DC 24V CAR Power Input Mode (Default)
2-3 (Right)	DC 12V CAR Power Input Mode



DELAY_TIME1 : Power Off delay time setup switch

Switch 1 / 2 / 3	Definition
ON / ON / ON	5 sec. (Default)
ON / ON / OFF	1 min.
ON / OFF / ON	5 min.
ON / OFF / OFF	10 min.
OFF / ON / ON	30 min.
OFF / ON / OFF	1 hour
OFF / OFF / ON	2 hour



Step of Setting Power Ignition

Step 1:

To select power ignition by PC/CAR switch.

Step 2:

To select battery input voltage by 12V / 24V switch.

Step 3:

To configure the power off delay time, please check the Delay Time Setting Options in advance.

Step 4:

To connect the power and ignition power

Step 3

Switch 1 / 2 / 3	Power off delay time
ON / ON / ON	5 second
ON / ON / OFF	1 minute
ON / OFF / ON	5 minutes
ON / OFF / OFF	10 minutes
OFF / ON / ON	30 minutes
OFF / ON / OFF	1 hour
OFF / OFF / ON	2 hours

Step 1

Pin 1-2 (Left): PC Power Mode

Pin 2-3 (Right): Power Ignition Mode



Step 2

Pin 1-2 (Left): Battery 24V Input Mode

Pin 2-3 (Right): Battery 12V Input Mode

Example: Delay Time Setting for 5 minutes

1. If delay time set as "5 minutes"



2. The system will shut down 5 minutes later after turning off the vehicle.



Step 4

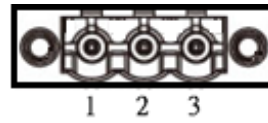
To connect the battery power and ignition power



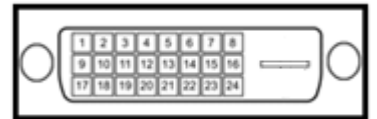
DC_IN1: DC Power Input Connector (+9~48V)

Connector Type: Terminal Block 1X3 3-pin, 5.0mm pitch

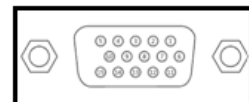
Pin	Definition
1	+9~48VIN
2	Power Ignition
3	GND

**DVI_IN1: DVI-D Input Connector**

Pin	Definition	Pin	Definition
1	DVI_TX2-	13	NC
2	DVI_TX2+	14	+5V
3	GND	15	GND
4	NC	16	DVI Hot Plug Detect
5	NC	17	DVI_TX0-
6	DVI_DDC_CLOCK	18	DVI_TX0+
7	DVI_DDC_DATA	19	GND
8	VGA VSYNC	20	NC
9	DVI_TX1-	21	NC
10	DVI_TX1+	22	GND
11	GND	23	DVI_TXCLK+
12	NC	24	DVI_TXCLK-

**VGA_IN1: VGA Input Connector**

Pin	Definition	Pin	Definition
1	RED	9	+5V
2	GREEN	10	GND
3	BLUE	11	NC
4	NC	12	DDC_SDA
5	GND	13	HSYNC
6	RED_GND	14	VSYNC
7	GREEN_GND	15	DDC_SCL
8	BLUE_GND		



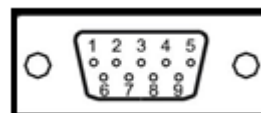
DP_IN1: DisplayPort Input Connector

Pin	Definition	Pin	Definition
1	DP_LANE0_P	11	GND
2	GND	12	DP_LANE3_N
3	DP_LANE0_N	13	GND
4	DP_LANE1_P	14	GND
5	GND	15	DP_AUX_P
6	DP_LANE1_N	16	GND
7	DP_LANE2_P	17	DP_AUX_N
8	GND	18	DP_HPD
9	DP_LANE2_N	19	GND
10	DP_LANE3_P	20	DP_PWR

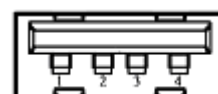
**COM_IN1: COM Port Input Connector**

Connector Type: 9-pin D-Sub

Pin	Definition
1	NC
2	RxD4
3	TxD4
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

**USB_IN1: USB2.0 Input Connector, Type A**

Pin	Definition
1	+5V
2	USB2_D0-
3	USB2_D0+
4	GND



AUDIO_IN1 : Audio-in Jack (Green)

Connector Type: 5-pin Phone Jack

Pin	Definition
1	GND
2	OUT_R
3	NC
4	GND
5	OUT_L

**PWR_LED1: Backlight Power LED Status**

Pin	Definition
1	BACKLIGHT LED+
2	BACKLIGHT LED-

**SUS_LED1: Backlight Suspend LED Status**

Pin	Definition
1	SUSPEND LED+
2	SUSPEND LED-



Chapter 3

Front Panel Controls

3.1 Users Controls



3.1.1 Power button

Turns the monitor on or off.

3.1.2 LED

1. Blue indicates power on.
2. Yellow indicates standby mode.

3.1.3 MENU/ Enter button

Press to view the OSD menu. Press it again to enter a selection in the OSD menu.

3.1.4 Increase button

1. Activates the Volume control menu, and increases volume (with audio option).
2. Scrolls the OSD menu upward.
3. Increases the value of a selected function.

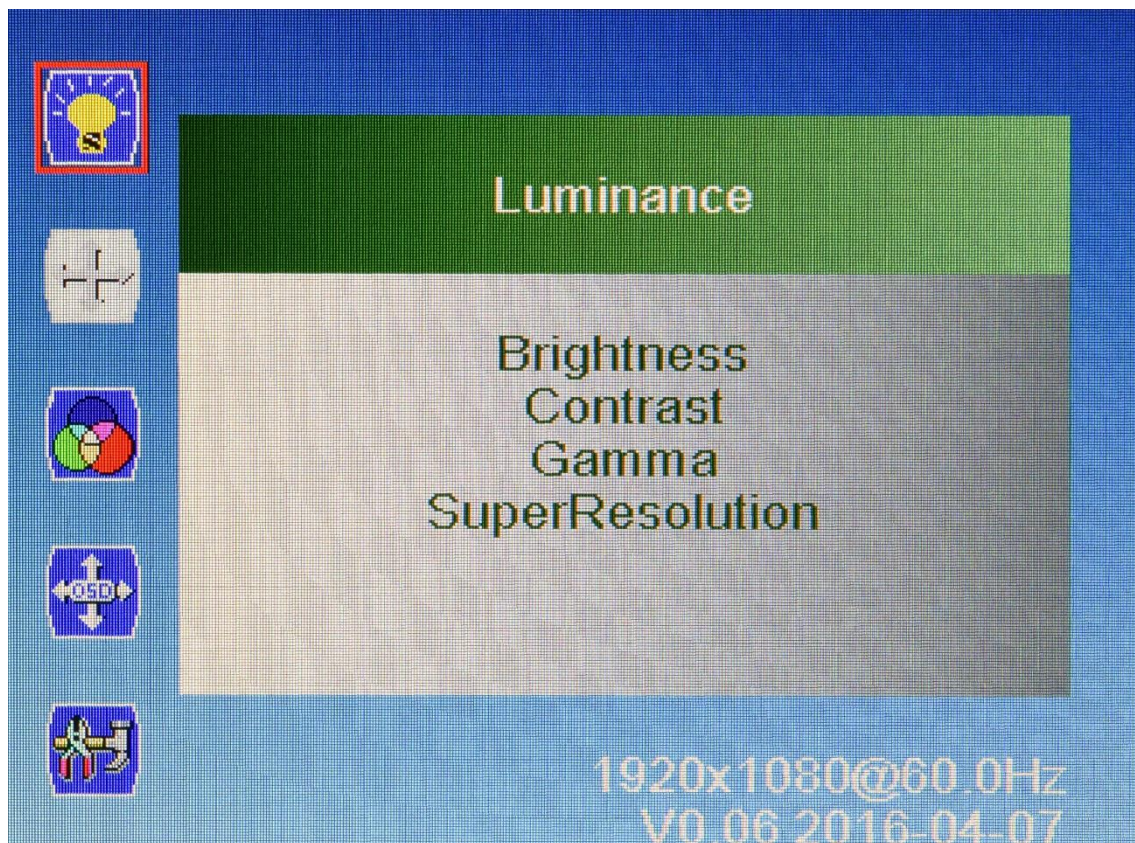
3.1.5 Decrease button

1. Activates the Volume control menu, and decreases volume (with audio option).
2. Scrolls the OSD menu downward.
3. Decreases the value of a selected function.

3.1.6 AUTO/ Exit button

1. When the OSD menu is active, press this button to exit the OSD menu.
2. When the OSD menu is inactive, press this button for two seconds to activate the Auto Adjustment function and the monitor will automatically optimize the display position, focus, and clock of your display.

3.2 OSD Operation



3.2.1 Luminance



■ Brightness

Adjust the luminance level of the screen.

■ Contrast

Adjusts the contrast level of the screen.

■ Gamma

This item allows you to on or off the Gamma function.

■ SuperResolution

This setting allows you to select options for the SuperResolution. Select <Off> , <Weak>, <Median> or .

3.2.2 Picture



■ Phase

Adjust the monitor internal signal phase.

■ Clock

Adjust the monitor internal sampling clock rate.

■ H. Position

Adjusts the position of the screen image left and right.

■ V. Position

Adjusts the position of the screen image up and down.

3.2.3 Color



■ Color Temperature

6500K: Select the setting of screen color to be reddish white.

7500K: Select the setting of screen color to be bluish white.

9300K: Select the setting of screen color to be bluish white.

sRGB: Set the screen color to fit the sRGB standard color specification.

User Define: Individual adjustments for red (R), green (G), blue (B).

3.2.4 OSD Settings



■ Horizontal

Changes the viewing position of the OSD menu to the left or right area of the screen.

■ Vertical

Changes the viewing position of the OSD menu to the top or bottom area of the screen.

■ Transparency

Adjust to view the background information through the OSD.

■ OSD Time Out

Sets the time duration in seconds that the OSD is visible after the last button is pressed.

2.2.5 Setup



■ Language

Selects the language in which the OSD menu is displayed. The factory default is English.

■ Mute

Allows the user to turn the Mute On or Off.

■ Input

When press Input Select change Input signal to D-SUB, DVI or DP.

■ Reset

Reset monitor parameters back to factory preset values.

Chapter 4

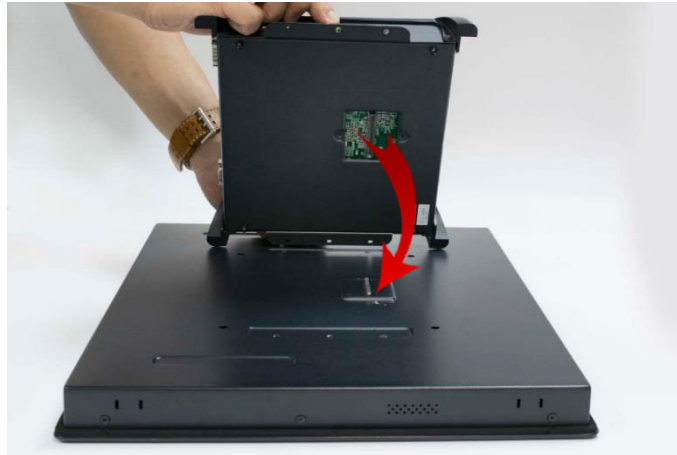
System Setup

4.1 Connecting with VIO Series Display Module

**WARNING**

In order to prevent electric shock or system damage, before removing the chassis cover, must turn off power and disconnect the unit from power source.

1. Locate the module connector slot and loosen the 1 screw.



2. Turn over the unit to have the bottom side face up, loosen the 2 screws of the module connector bracket.



3. Turn over the unit to have the bottom side face up, loosen the 2 screws of the module connector bracket.



