Displays

MPE Series

Sealed Panel-Mount Touchscreen LCD Monitors with AC or DC Power Input

RoHS compliant

USER'S MANUAL

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Chapter

1

Introduction

1.1 Overview

Figure 1 1: MPE series

The MPE series is RoHS compliant. It is designed to fit industrial automation, or any other applications that require minimum installation space and flexible configuration. The flat front panel provides IP 65 protection, which effectively wards off dust and water. Flexible analog or digital interfaces are provided for ease of connection with a management computer.

1.2 Features

All the base models listed in **Section 1.2.1** have the following standard features

- IP 65 compliant aluminum front panel
- Analog VGA interface supports most general system boards
- Over 300 cd/m^2 high brightness LCD panel
- Analog resistive type touch panel
- Advanced thermal and air-flow design
- Supports panel, rack, wall, DIN rail, stand and arm mounting
- DG models support 9~36V DC power input for mobile application
- RoHS compliant

1.3 Model Variations

The MPE series LCD monitor has the following seven base models.

- MPE 06: 6.5” LCD screen
- MPE 08: 8.4” LCD screen
- MPE 10: 10.4” LCD screen
- MPE 12: 12.1” LCD screen

The model variations are listed in **Table 1-1**.

Model Number	LCD	9~36V Power Input	Touchscreen
MPE 06AG	6.5”	-	Yes
MPE 08AG	8.4”	-	Yes
MPE 08DG		Yes	Yes
MPE 10AG	10.4”	-	Yes
MPE 10DG		Yes	Yes
MPE 12AG	12.1”	-	Yes
MPE 12DG		Yes	Yes

Table 1-1: MPE series Model Variations

1.4 Applications

The MPE series LCD monitor is designed for rigorous industrial environments where it may be exposed to both heat and moisture. Its durability and strength also makes it an ideal choice for public access computers. Some possible applications include:

- Digital Surveillance
- Digital surveillance
- X-ray imaging terminal
- Multimedia advertising platform
- General Computing
  - Computer-based testing center
  - General purpose information system
  - Mobile nursing station

- Interactive education use

- Automation & Control
  - Plant environment monitoring
  - Factory automation HMI terminal
  - Shop-floor/MES control
- Self-service Kiosk
  - Full-service receptionist kiosk
  - Hospital self-registering terminal
  - Interactive photo kiosk
  - Video rental kiosk
  - Self-service POS terminal

1.5 External Overview

The MPE series LCD monitors are durable devices that can be used in harsh industrial environments. The following sections describe the physical layout of the MPE series LCD monitors.

1.5.1 Front View

The front of the MPE series LCD monitor is a flat panel LCD screen surrounded by an aluminum frame. A control button panel (OSD), if available, is located either vertically on the right side of the frame or horizontally along the bottom of the frame with the following control buttons:

- LCD On/Off
- Auto
- Left
- Right
- Menu

The OSD panel also has one power LED.

Figure 1-2 shows a typical monitor front view.

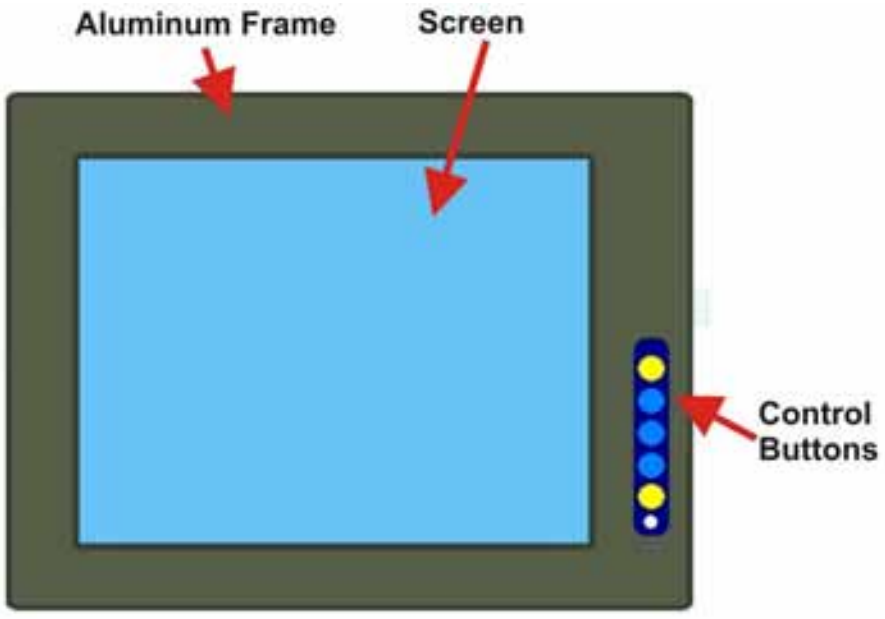

Figure 1-2: Typical Monitor Front View

1.5.2 Bottom Panel View

Figure 1-3 shows a general bottom panel. Specific models may include or exclude additional connectors. Refer to **Section 2.3** for listings of monitors and their connectors. All connectors are fully described in **Section 5.4**.

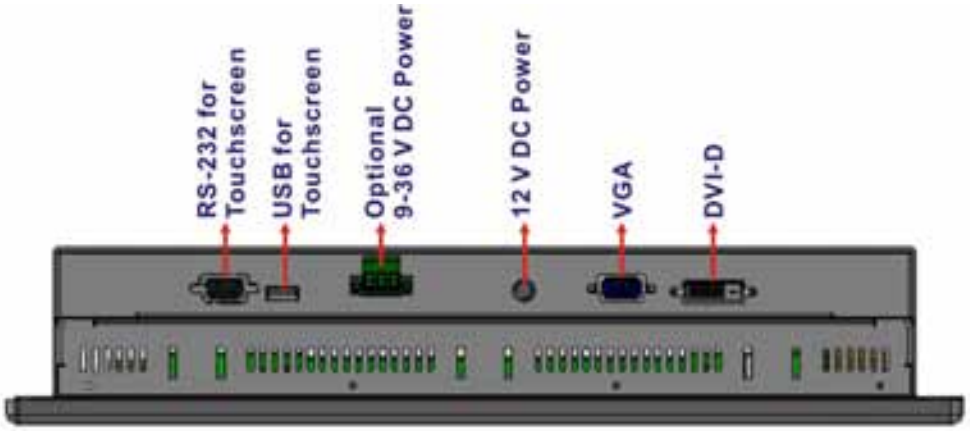

Figure 1-3: Bottom Panel View

1.5.3 Control Board

The MPE series LCD monitor control board provides a wide variety of control interfaces, receiving and managing signals from a CPU card through cabling. **Figure 1-4** shows the MPE 12 Control board as a sample of a typical Control board for the MPE series LCD monitor. Refer to **Chapter 4** for a complete description of Control boards and their connectors.

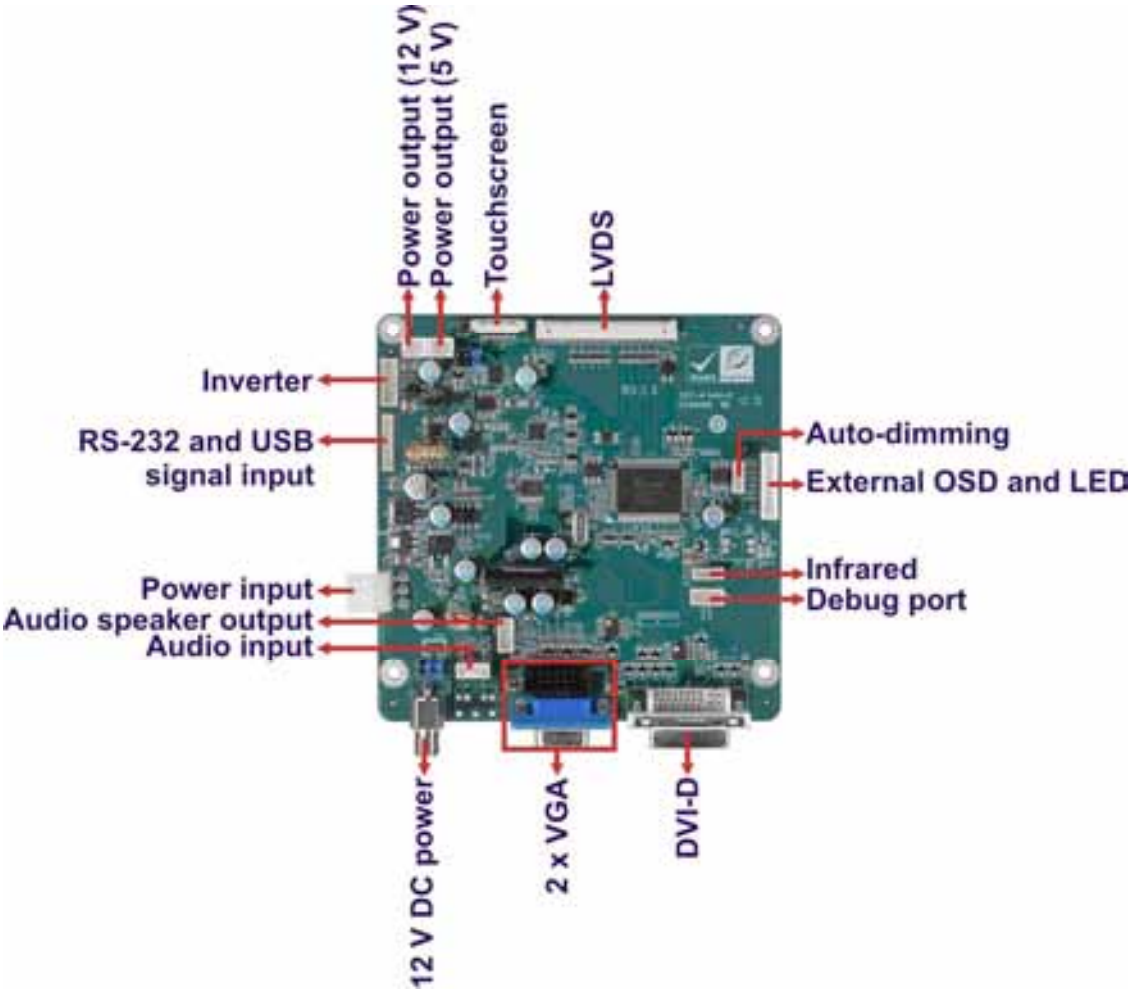

Figure 1-4: MPE 12 Control Board

1.6 Series Specifications

Table 1-2 shows the MPE series specifications.

Model	MPE 06	MPE 08	MPE 10	MPE 12
LCD Size	6.5"	8.4"	10.4"	12.1"
Input Interface	VGA	VGA	VGA	VGA DVI-D
Max. Resolution	640x480	800x600	800x600	1024x768
Brightness (cd/m2)	300	300	300	300
Contrast	600:1	600:1	700:1	700:1
LCD Color	262K	262K	262K	262K
Pixel Pitch (mm)	0.207	0.213	0.264	0.3075
Front Frame	Aluminum	Aluminum	Aluminum	Aluminum
Chassis	Heavy-duty steel	Heavy-duty steel	Heavy-duty steel	Heavy-duty steel
View Angle (H / V)	160/140	160/140	160/140	160/160
Power Adapter	36W	36W	36W	36W
OSD function	Yes	Yes	Yes	Yes
Mounting	Panel Wall Rack DIN Arm	Panel Wall Rack Arm Stand	Panel Wall Rack Arm Stand	Panel Wall Rack Arm Stand
Dimension (WxHxD) (mm)	183 x 143 x 41	244 x 178 x 49	312 x 242 x 53	340 x 260 x 58
Color	Silver	Silver	Silver	Silver
Operating Temperature	-10~50°C	-10~50°C	-10~50°C	-10~50°C
IP Level	IP 65	IP 65	IP 65	IP 65
N/G Weight	1kg	1.8kg	3kg	3.8kg

Model	MPE 06	MPE 08	MPE 10	MPE 12

Table 1-2: MPE series Specifications

1.7 Certifications

All MPE series LCD monitor models comply with the following international standards:

- RoHS
- IP 65

Chapter

2

Mechanical Overview

2.1 Introduction

This chapter describes the general mechanical overview of the MPE series monitors including front and bottom panel variations, available interfaces and overall dimensions.

2.2 Front Panel

The front panel of the MPE series LCD monitor is comprised of a LCD in an aluminum frame with an OSD control panel.

2.2.1 Front Panel Variants

Table 2-1 shows the three front panel variants for the MPE series LCD monitor.

Model	OSD Control Panel Location	Variant Number
MPE 12, MPE 10, MPE 08	Vertically along the right side of the aluminum frame	1
MPE 06	In line along the bottom of the rear panel	3

Table 2-1: Front Panel Variants

2.2.2 Front Panel Variant 1

The following models of the MPE series LCD monitor have an OSD control panel located vertically along the right side of the aluminum frame:

- MPE 12
- MPE 10
- MPE 08

Figure 2-1 shows the location of the front panel variant 1 OSD controls.

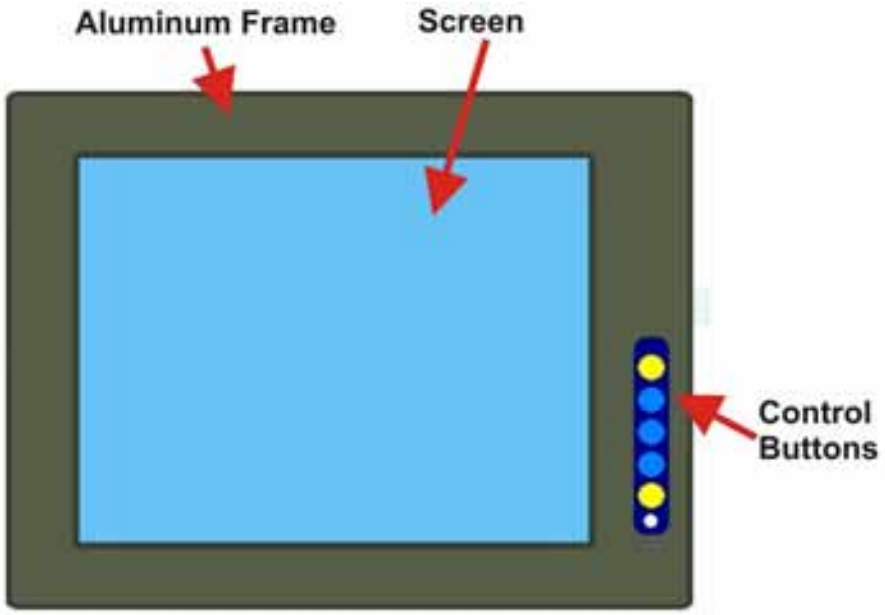

Figure 2-1: Front Panel Variant 1

2.2.3 Front Panel Variant 2

The following model of the MPE series LCD monitor has an OSD control panel located in-line along the bottom of the aluminum frame:

- MPE 06

Figure 2-2 shows the location of the front panel variant 3 OSD controls.

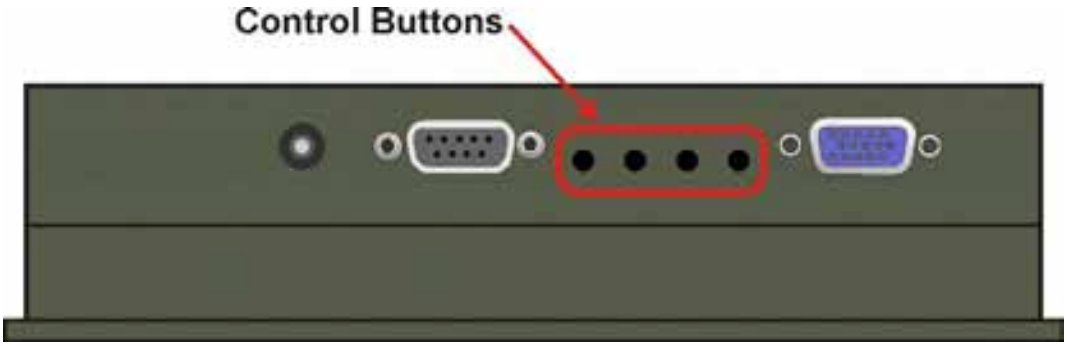

Figure 2-2: Front Panel Variant 3

2.3 Bottom Panel

All peripheral device connectors are located on the bottom panel of the MPE series LCD monitor. The following sections describe the bottom panel variants and their associated connectors.

2.3.1 Available Connectors

There are a number of bottom panel peripheral device connectors available for the MPE series LCD monitor.

- VGA connector
- DVI-D connector
- 12V power connector
- 9~36V terminal block
- RS-232 serial connector
- USB connector

2.3.2 MPE 06 Connectors

The following is a list of the bottom panel peripheral device connectors used on the MPE 06 series LCD monitor.

- VGA connector
- 12V power connector
- USB connector for touchscreen

2.3.3 MPE 08 Connectors

The following is a list of the bottom panel peripheral device connectors used on the MPE 08 series LCD monitor.

- VGA connector
- 12V power connector
- 9~36V terminal block (DG model only)

2.3.4 MPE 10 Connectors

The following is a list of the bottom panel peripheral device connectors used on the MPE 10 series LCD monitor.

- VGA connector
- 12V power connector
- RS-232 serial connector for touchscreen
- USB connector for touchscreen
- 9~36V terminal block (DG model only)

2.3.5 MPE 12 Connectors

The following is a list of the bottom panel peripheral device connectors used on the MPE 12 series LCD monitor.

- VGA connector
- DVI-D connector
- 12V power connector
- RS-232 serial connector for touchscreen

- USB connector for touchscreen
- 9~36V terminal block (DG model only)

2.4 Physical Dimensions

The following sections describe the physical dimensions for each model of the MPE series LCD monitor.

2.4.1 General Physical Dimensions

General physical dimensions for the MPE series LCD monitors are shown in **Table 2-2**.

Model	Width (mm)	Height (mm)	Depth (mm)
MPE 12	340	260	58
MPE 10	312	242	53
MPE 08	244	178	49
MPE 06	183	143	41

Table 2-2: General Physical Dimensions

2.4.2 MPE 12 Physical Dimensions

The physical dimensions of the MPE 12 are shown in **Figure 2-3**.

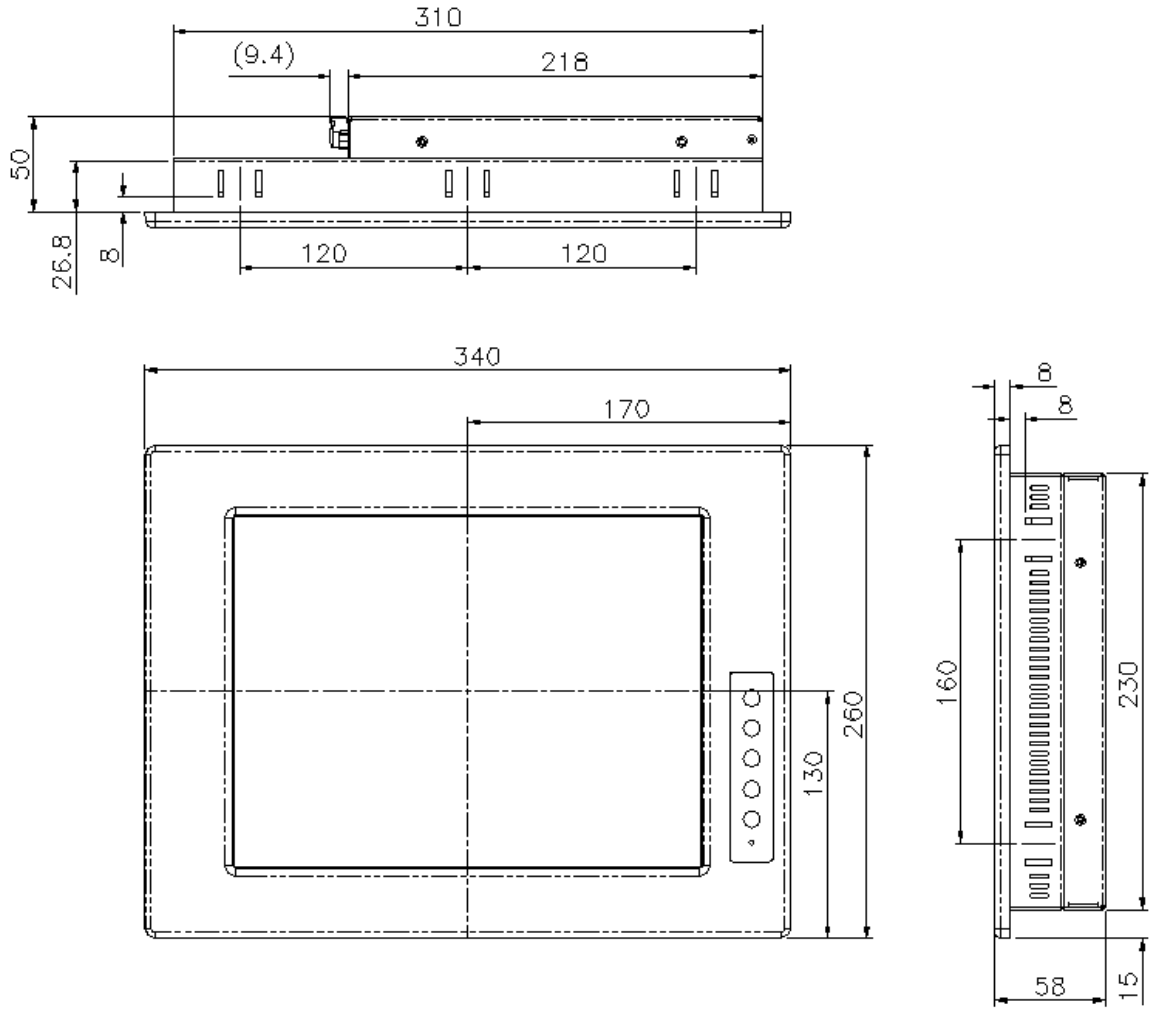

Figure 2-3: MPE 12 Physical Dimensions (millimeters)

2.4.3 MPE 10 Physical Dimensions

The physical dimensions of the MPE 10 are shown in **Figure 2-4**.

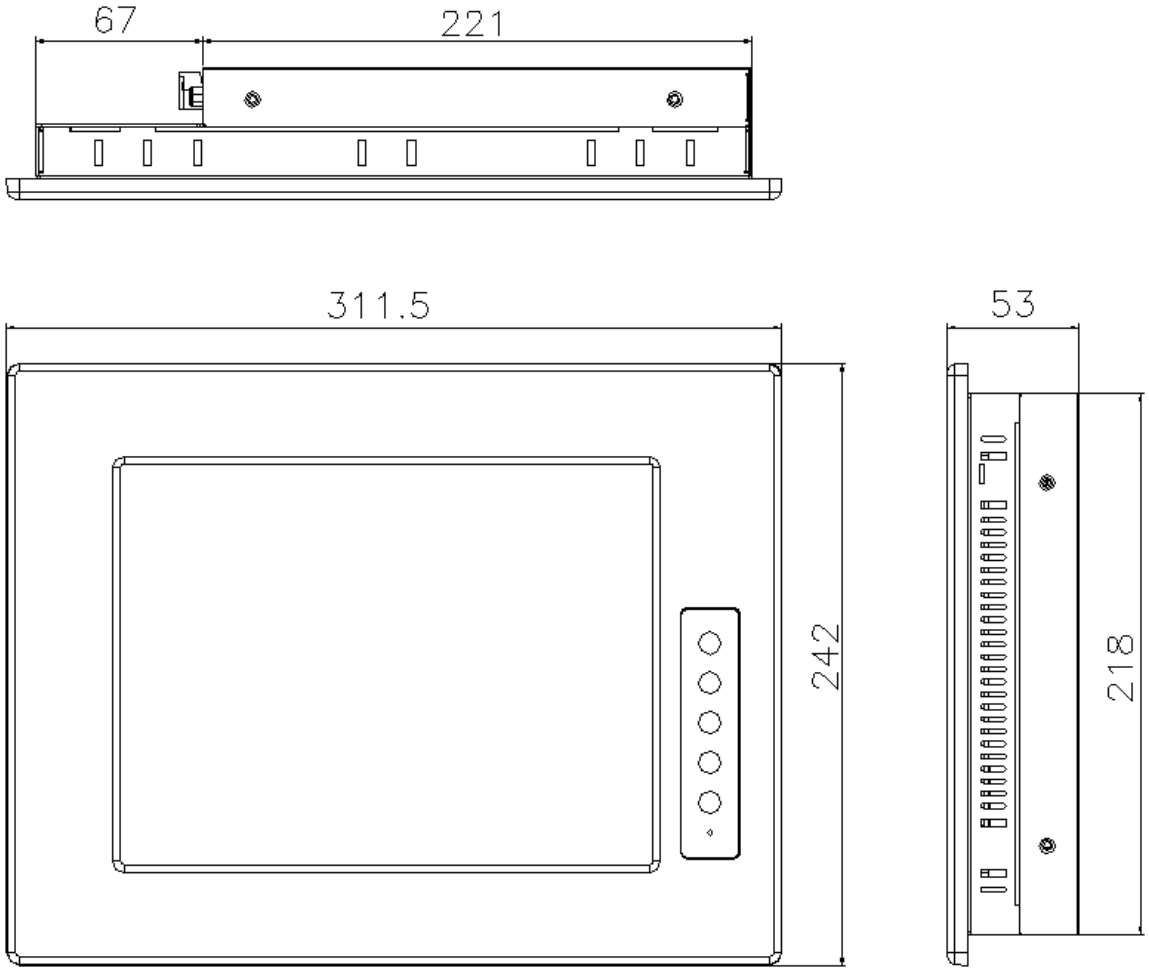

Figure 2-4: MPE 10 Physical Dimensions (millimeters)

2.4.4 MPE 08 Physical Dimensions

The physical dimensions of the MPE 08 are shown in **Figure 2-5**.

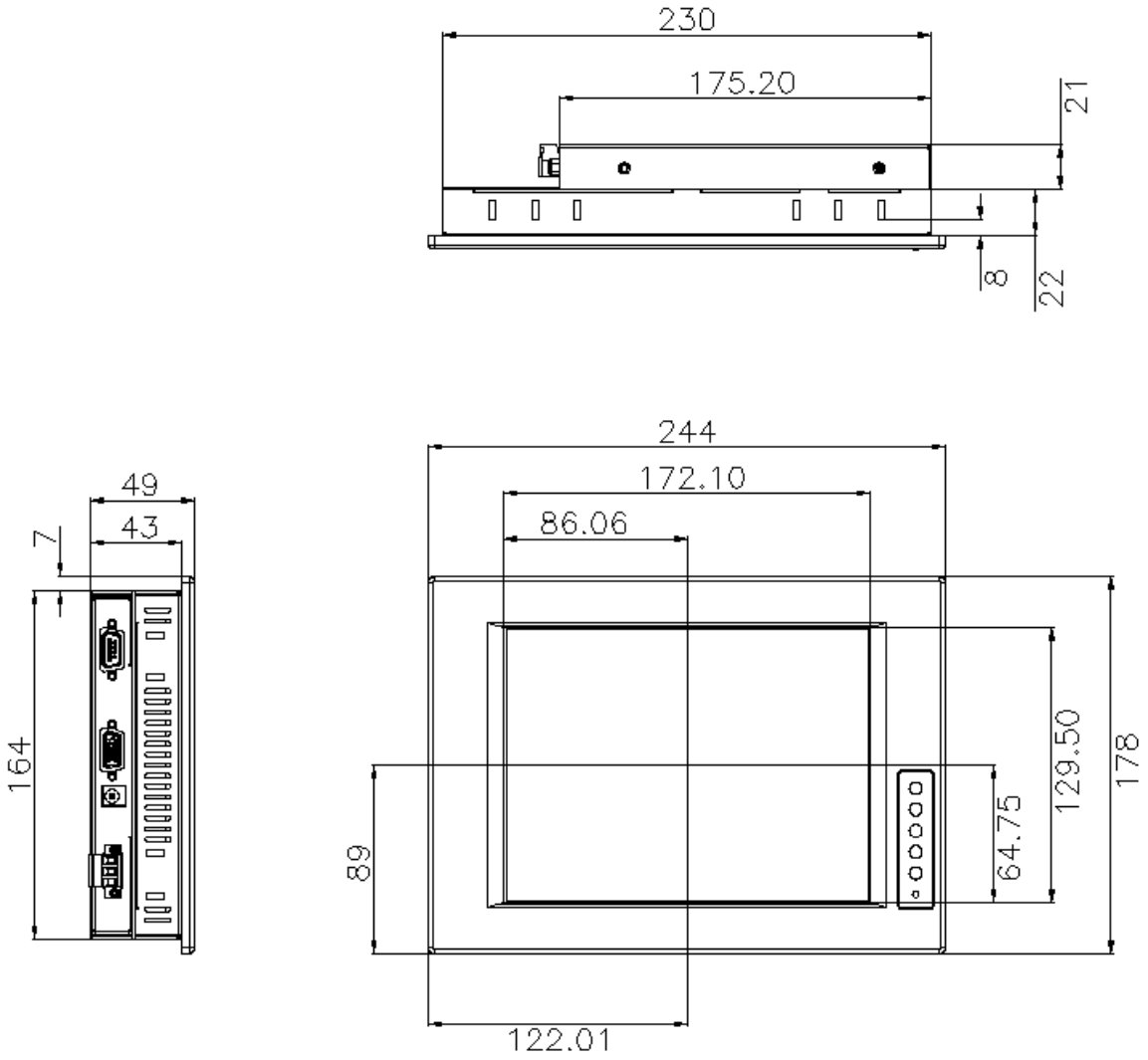

Figure 2-5: MPE 08 Physical Dimensions (millimeters)

2.4.5 MPE 06 Physical Dimensions

The physical dimensions of the MPE 06 are shown in **Figure 2-6**.

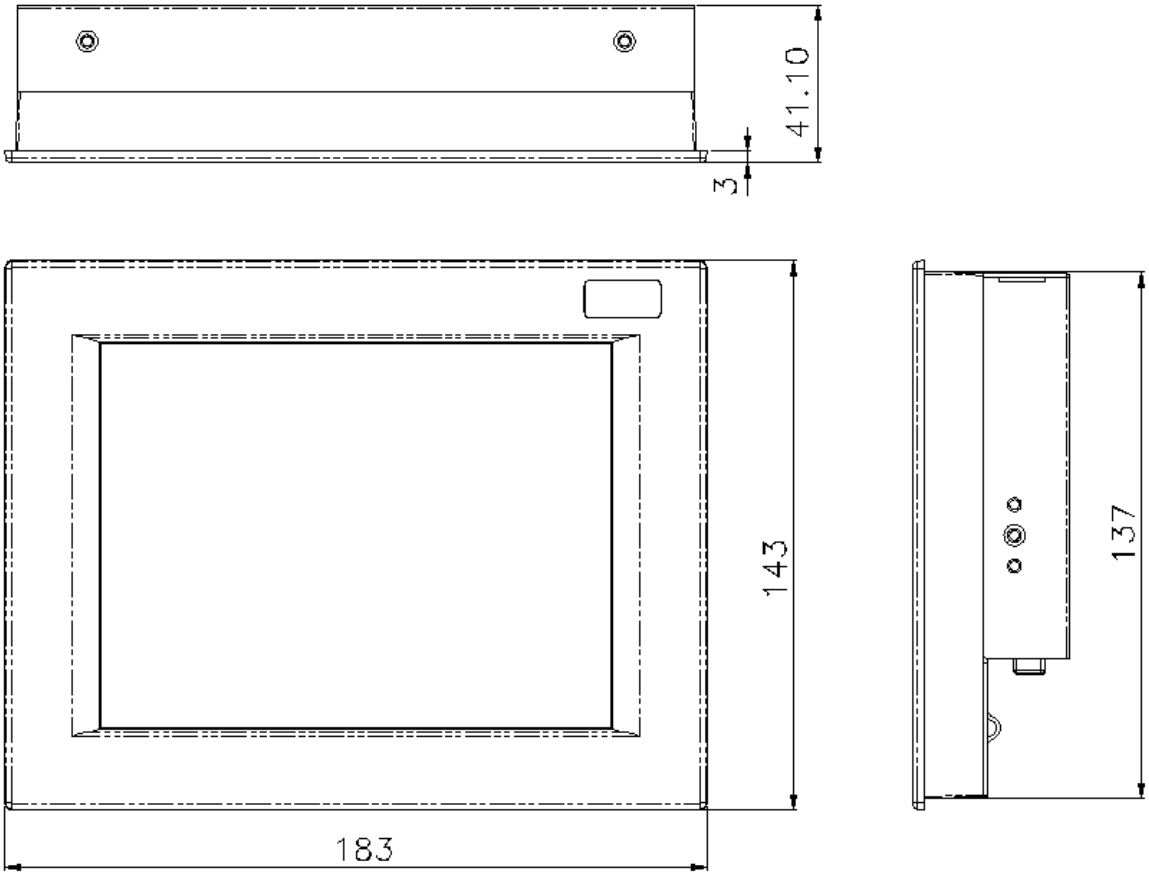

Figure 2-6: MPE 06 Physical Dimensions (millimeters)

2.5 Optional Mounting Kits

The following sections describe the various optional mounting kits available for each model of the MPE series LCD monitor. Refer to **Section 5.5** for detailed instructions on the different mounting methods for the monitors.

CAUTION:

Due to safety concerns, it is highly recommended to use the VESA mounting kits provided by CyberResearch, Inc. for wall, stand and arm mounting. If the VESA mounting kit is purchased separately, please make sure the mounting kit is UL-listed.

2.5.1 MPE 06 Mounting Kits

Table 2-3 lists the mounting kits available for the MPE 06 monitor.

Model	MPE 06
Panel Mounting Kit	MPE 06GPK
Rack Mounting Kit	MPE 06GRK
Wall Mounting Kit	MPE 06GWK
DIN Mounting Kit	MPE 08GDK

Table 2-3: MPE 06 Mounting Kits

2.5.2 MPE 08 Mounting Kits

Table 2-4 lists the mounting kits available for the MPE 08 monitor.

Model	MPE 08
Panel Mounting Kit	MPE 08GPK
Rack Mounting Kit	MPE 08GRK
Wall Mounting Kit	MPE 19GPK
DIN Mounting Kit	MPE 08GDK

Table 2-4: MPE 08 Mounting Kits

2.5.3 MPE 10 Mounting Kits

Table 2-5 lists the mounting kits available for the MPE 10 monitor.

Model	MPE 10
Panel Mounting Kit	MPE 10GPK
Rack Mounting Kit	MPE 10GRK
Wall Mounting Kit	MPE 19GWK
DIN Mounting Kit	N/A

Table 2-5: MPE 10 Mounting Kits

2.5.4 MPE 12 Mounting Kits

Table 2-6 lists the mounting kits available for the MPE 12 monitor.

Model	MPE 12
Panel Mounting Kit	MPE 12GPK
Rack Mounting Kit	MPE 12GRK
Wall Mounting Kit	MPE 19GWK
DIN Mounting Kit	N/A

Table 2-6: MPE 12 Mounting Kits

Chapter

3

LCD Specifications

3.1 LCD Specifications

3.1.1 LCD Overview

The MPE series LCD monitors use the following LCD panels.

- **MPE 12**: AUO G121XN01 V0
- **MPE 10**: AUO/G104SN02 V2
- **MPE 08**: AUO/G084SN05 V8
- **MPE 06**: AUO/G065VN01 V2

Detailed specifications for the LCD screens are listed in the following sections.

3.1.2 MPE 12 LCD Specifications

Table 3-1 lists the MPE 12 LCD specifications.

Model	MPE 12
Size	12.1”
MFR/Model	AUO/G121XN01 V0
Resolution	XGA (1024 x 768)
Active Area (mm)	245.76 x 184.32
Pixel Pitch (mm)	0.3075
Mode	TN
Number of Colors	262K
View Angle (H/V)	160/160
Brightness (cd/m2)	300
Contrast Ratio	700:1
Response Time (ms) (at 25C)	35
Power Consumption (W)	9.15
Interface	1ch LVDS
Supply Voltage (V)	3.3
Backlight	LED
Color Saturation (NTSC%)	70

Table 3-1: MPE 12 LCD Specifications

3.1.3 MPE 10 LCD Specifications

Table 3-2 lists the MPE 10 LCD specifications.

Model	MPE 10
Size	10.4”
MFR/Model	AUO/G104SN02 V2
Resolution	SVGA (800 x 600)
Active Area (mm)	211.2 x 158.4
Pixel Pitch (mm)	0.264
Mode	TN
Number of Colors	262K
View Angle (H/V)	160 / 140
Brightness (cd/m2)	300
Contrast Ratio	700:1
Response Time (ms) (at 25C)	30
Power Consumption (W)	5.2
Interface	1ch LVDS
Supply Voltage (V)	3.3
Backlight	LED
Color Saturation (NTSC%)	45

Table 3-2: MPE 10 LCD Specifications

3.1.4 MPE 08 LCD Specifications

Table 3-3 lists the MPE 08 LCD specifications.

Model	MPE 08
Size	8.4”
MFR/Model	AUO/G084SN05 V8
Resolution	SVGA (800 x 600)
Active Area (mm)	170.4 x 127.8
Pixel Pitch (mm)	0.213
Mode	TN
Number of Colors	262K
View Angle (H/V)	160 / 140
Brightness (cd/m2)	300
Contrast Ratio	600:1
Response Time (ms) (at 25C)	30
Power Consumption (W)	4.2
Interface	LVDS
Supply Voltage (V)	3.3
Backlight	LED
Color Saturation (NTSC%)	45

Table 3-3: MPE 08 LCD Specifications

3.1.5 MPE 06 LCD Specifications

Table 3-4 lists the MPE 06 LCD specifications.

Model	MPE 06
Size	6.5”
MFR/Model	AUO/G065VN01 V2
Resolution	VGA (640 x 480)
Active Area (mm)	132.48 x 99.36
Pixel Pitch (mm)	0.207
Mode	TN
Number of Colors	262K
Color Saturation (NTSC%)	55
View Angle (H/V)	160/140
Brightness (cd/m2)	300
Contrast Ratio	600:1
Response Time (ms) (at 25C)	25
Power Consumption (W)	3.86
Interface	LVDS
Supply Voltage (V)	3.3
Backlight	LED

Table 3-4: MPE 06 LDVD Specifications

Chapter

4

Jumpers and Connectors

4.1 Overview

The MPE series LDVD monitor provides a wide variety of control interfaces, receiving and managing interface signals from a CPU card through cabling. The following sections describe each monitor in detail.

4.2 MPE 06 Control Board

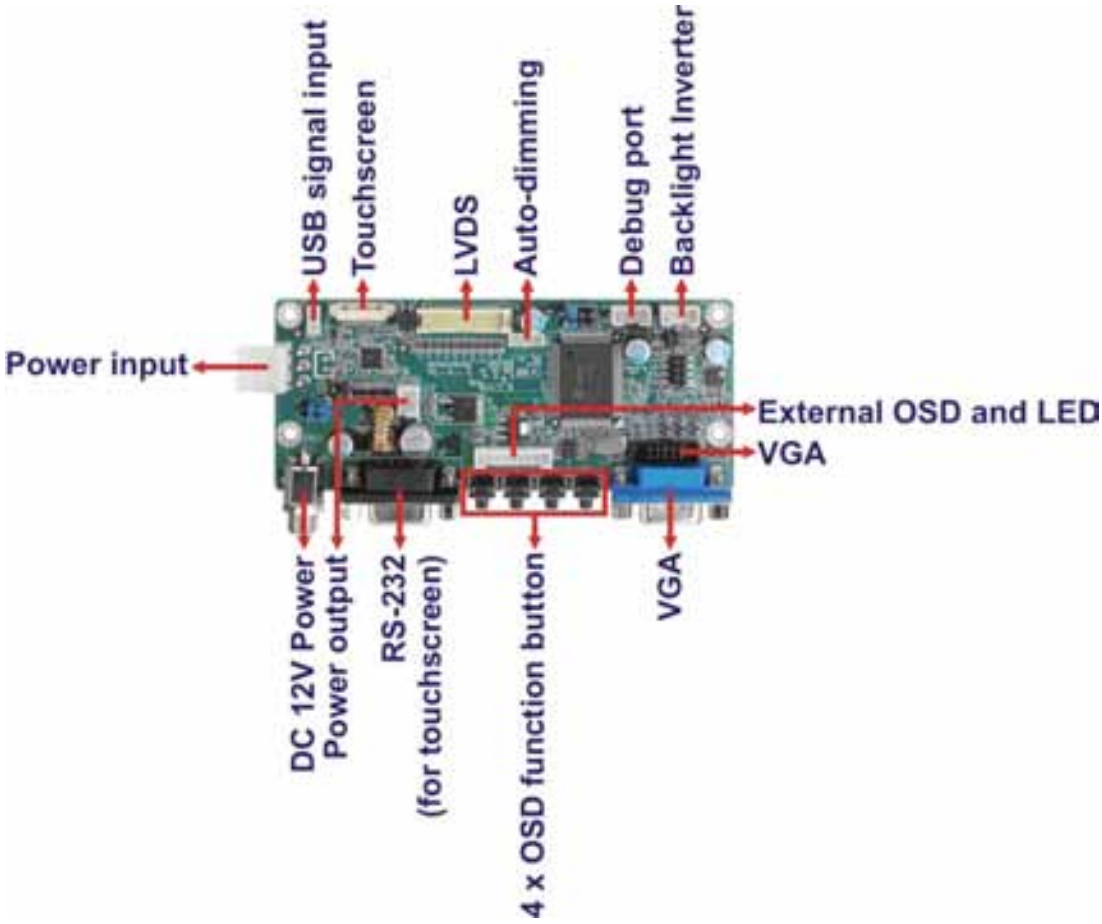

Figure 4-1: MPE 06 Control Board Overview

4.2.1 MPE 06 Peripheral Interface Connectors

Table 4-1 shows a list of the peripheral interface connectors on the MPE 06 monitor.

Connector	Type	Label
Auto-dimming connector	6-pin wafer connector	CN7

Backlight Inverter connector	4-pin wafer connector	CN16
Debug port connector	4-pin wafer connector	CN9
External OSD and LED indication connector	9-pin wafer connector	CN10
LVDS connector	30-pin crimp connector	CN15
Power input connector	3-pin connector	CN2
Power output connector	2-pin wafer connector	CN4
USB signal input connector	4-pin wafer connector	CN17
Touchscreen connector	9-pin wafer connector	J4
VGA connector	10-pin box header	CN14

Table 4-1: MPE 06 Peripheral Interface Connectors

4.2.2 MPE 06 Rear Panel Connectors

Table 4-2 lists the rear panel connectors and buttons on the MPE 06 monitor.

Connector	Type	Label
DC 12V power connector	DC Power Jack	CN13
Serial port connector	RS-232 connector	J7
OSD function button	Pushbutton	S1
OSD function button	Pushbutton	S2
OSD function button	Pushbutton	S3
OSD function button	Pushbutton	S4
VGA connector	15-pin VGA connector	VGA1

Table 4-2: MPE 06 Rear Panel Connectors

4.3 MPE 08/10 Control Board

Figure 4-2: MPE 08/10 Control Board

4.3.1 MPE 08/10 Peripheral Interface Connectors

Table 4-3 shows a list of the peripheral interface connectors on the MPE 08/10 monitor.

Connector	Type	Label
Auto-dimming connector	6-pin wafer connector	CN7
Backlight inverter connector	6-pin wafer connector	CN6
Debug port connector	4-pin wafer connector	CN9
External OSD and LED indication connector	9-pin wafer connector	CN10
LVDS output connector	30-pin connector	CN5
Power output connector	2-pin header	CN4
Power input connector	3-pin connector	CN2
RS-232 and USB signal input connector	12-pin wafer connector	CN14
Touchscreen connector	9-pin wafer connector	J4
VGA connector	10-pin box header	VGA2

Table 4-3: MPE 08/10 Peripheral Interface Connectors

4.3.2 MPE 08/10 Rear Panel Connectors

Table 4-4 lists the rear panel connectors and jumpers on the MPE 08/10 monitor.

Connector	Type	Label
DC 12V power connector	DC Power Jack	CN13
VGA connector	15-pin VGA connector	VGA1

Table 4-4: MPE 08/10 Rear Panel Connectors

4.4 MPE 12 Control Board

The MPE 12 provides a wide variety of control interfaces, receiving and managing interface signals from a CPU card through cabling. The following sections describe the MPE 12 in detail.

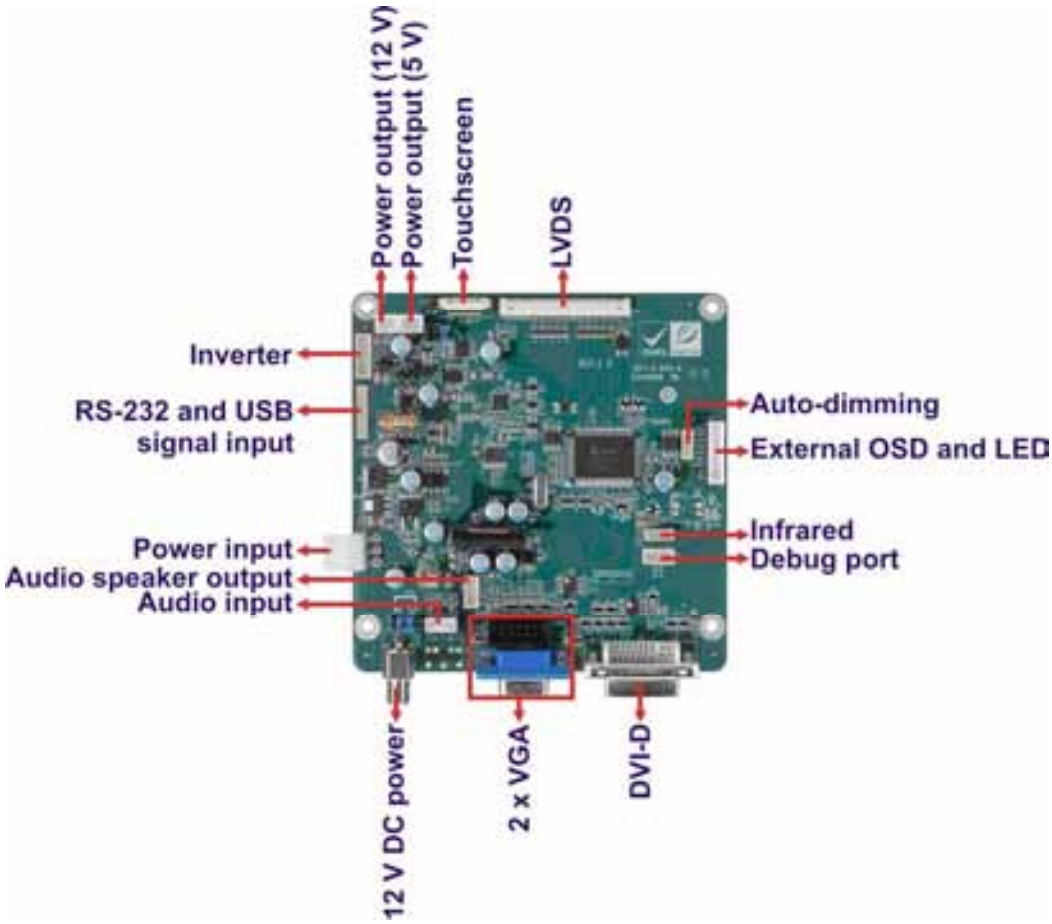

Figure 4-3: MPE 12 Control Board Overview

4.4.1 MPE 12 Peripheral Interface Connectors

Table 4-5 shows a list of the peripheral interface connectors on the MPE 12 monitor.

Connector	Type	Label
Audio input connector	4-pin wafer connector	CN11
Audio speaker output connector	4-pin wafer connector	CN12

Auto-dimming connector	6-pin wafer connector	CN7
Debug connector	4-pin wafer connector	CN9
External OSD and LED indication connector	9-pin wafer connector	CN10
Infrared connector	6-pin wafer connector	CN8
Inverter interface connector	6-pin wafer connector	CN6
LVDS connector	30-pin connector	CN5
Power output connector (+12 V)	2-pin wafer connector	CN3
Power output connector (+5 V)	2-pin wafer connector	CN4
Power input connector	3-pin connector	CN2
RS-232 and USB signal input connector	12-pin wafer connector	CN14
Touchscreen connector	9-pin wafer connector	J4
VGA connector	10-pin box header	VGA2

Table 4-5: MPE 12 Peripheral Interface Connectors

4.4.2 MPE 12 Rear Panel Connectors

Table 4-6 lists the rear panel connectors on the MPE 12 monitor.

Connector	Type	Label
12V DC power connector	DC Power Jack	CN13
DVI connector	24-pin DVI-D connector	J2
VGA connector	15-pin VGA connector	VGA1

Table 4-6: MPE 12 Rear Panel Connectors

Chapter

5

Installation

5.1 Installation Precautions

When installing the MPE series LDVD monitor, please follow the precautions listed below:

- **Read the user manual**: The user manual provides a complete description of the MPE series LDVD monitor, installation instructions and configuration options.
- **DANGER! Disconnect Power**: Power to the monitor must be disconnected when installing the MPE series LDVD monitor, or before any attempt is made to access the rear panel. Electric shock and personal injury might occur if the rear panel of the monitor is opened while the power cord is still connected to an electrical outlet.
- **Qualified Personnel**: The MPE series LCD monitor must be installed and operated only by trained and qualified personnel. Maintenance, upgrades, or repairs may only be carried out by qualified personnel who are familiar with the associated dangers.
- **Mounting**: Since the monitor may weigh up to 10 kg (not including a swing arm or other accessories), please ensure at least two people assist with mounting the monitor.
- **Air Circulation**: Make sure there is sufficient air circulation when installing the monitor. The monitor's cooling vents must not be obstructed by any objects. Blocking the vents can cause overheating of the monitor. Leave at least 5 cm of clearance around the monitor to prevent overheating.
- **Grounding**: The monitor should be properly grounded. The voltage feeds must not be overloaded. Adjust the cabling and provide external overcharge protection per the electrical values indicated on the label attached to the back of the monitor.
- **Anti-static Discharge**: The rear panel of the monitor must to be removed to configure the monitor's Control board voltage select jumper. When doing so, be sure the monitor is disconnected from its power source and take all necessary safety precautions to avoid electrocution and static discharge to the Control board. The use of a grounded wrist strap and an anti-static work pad is recommended.

5.2 Unpacking

5.2.1 Packaging

When shipped, the MPE series LCD monitor is wrapped in a plastic bag. Two polystyrene ends are placed on either side of the monitor. The monitor is then placed into a first (internal) cardboard box. This box is then sealed and placed into a second (external) cardboard box. The second box is also sealed. A bag containing accessory items is placed underneath the monitor, at the bottom of the internal (first) box.

5.2.2 Unpacking Procedure

To unpack the MPE series LCD monitor, follow the steps below:

WARNING:

The front side LCD screen has a protective plastic cover stuck to the screen. Only remove the plastic cover after the MPE series LCD monitor has been properly installed. This ensures the screen is protected during the installation process.

Step 1: Use box cutters, a knife or a sharp pair of scissors that seals the top side of the external (second) box.

Step 2: Open the external (second) box.

Step 3: Use box cutters, a knife or a sharp pair of scissors that seals the top side of the internal (first) box.

Step 4: Lift the monitor out of the boxes.

Step 5: Remove both polystyrene ends, one from each side.

Step 6: Pull the plastic cover off the MPE series LCD monitor.

Step 7: Make sure all the components listed in the packing list are present.

5.2.3 Packing List

All the monitors in the MPE series are shipped with the following components:

- 1 x MPE series LCD monitor.
- 1 x AC power cable
- 1 x VGA cable
- 1 x 36W AC power adapter
- 5 x Replacement round head screw
- 5 x Replacement flat head screw
- 5 x Replacement wire strain band
- 1 x User manual on CDROM
- 1 x Touch panel RS-232 cable
- 1 x Touch panel USB cable
- 1 x Touch Pen
- 1 x Driver CDROM
- 1 x Power cable for terminal block (Optional)

If any of these items are missing or damaged, contact a CyberResearch, Inc. sales representative immediately.

5.3 Pre-installation Preparation

5.3.1 Tools

Before installing the MPE series LCD monitor, make sure the following tools are on hand:

- **Philips (crosshead) screwdriver**: All the retention screws on the system are Philips screws.
- **Soft working mat**: When the MPE series LCD monitor is installed, the screen is placed on the working surface. It is therefore important to rest display on a soft surface that will not damage the LCD screen on the front of the MPE series LCD monitor.

5.3.2 Voltage Select Jumper Settings

If the monitor comes with both 12V and 9~36V DC power connectors, the voltage select jumper on the integrated Control board must be configured for the DC connector that is

used to power the monitor. Refer to **Chapter 4** for the appropriate jumper settings of each Control board.

NOTE:

The default voltage select jumper is configured for a 12V power source.

Do not change the jumper setting unless a 9~36V DC power connector is present on the rear panel and is to be used as the monitor's power source.

To properly set the voltage select jumper, the following steps must be completed:

Step 1: Use a screwdriver to remove all the screws holding the rear panel to the monitor.

Step 2: Remove the rear panel.

Step 3: Locate the voltage select jumper. (See **Chapter 4**.)

Step 4: Use the jumper(s) to set the correct voltage input. (See **Chapter 4**.)

Step 5: Replace the rear panel.

Step 6: Replace all removed screws.

5.4 Connectors

Chapter 4 lists the rear panel connectors for the MPE series LCD monitors.

	MPE 06	MPE 08	MPE 10	MPE 12
VGA	**Yes**	**Yes**	**Yes**	**Yes**
DVI-D	**-**	**-**	**-**	**Yes**
Power (12V Jack)	**Yes**	**Yes**	**Yes**	**Yes**
RS-232 Touch Panel	**-**	**-**	**Yes**	**Yes**
USB Touch Panel	**Yes**	**-**	**Yes**	**Yes**
Power (9~36V)	**-**	**Yes**	**Yes**	**Yes**

(Optional)				

5.4.1 Rear Panel Connectors Overview

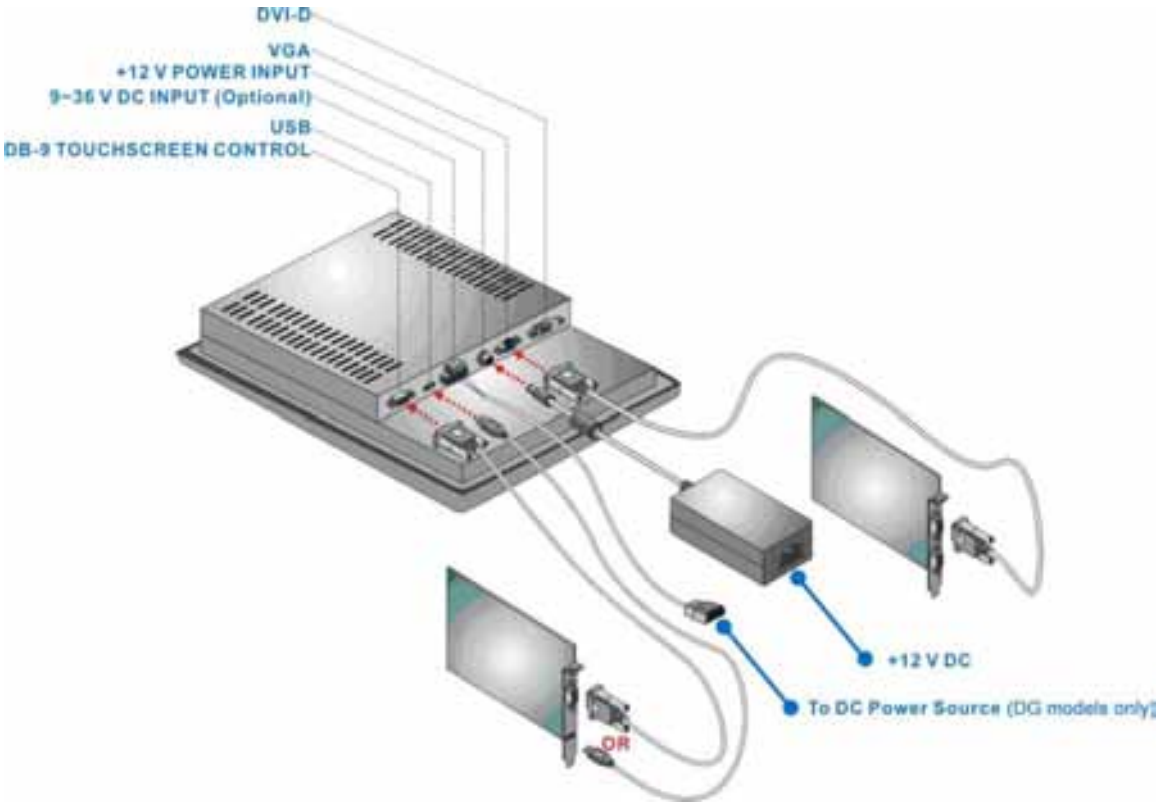

Figure 5-1: Monitor Rear Panel Connections

Figure 5-1 shows all the possible rear panel connectors for the MPE series LCD monitor. Refer to **Chapter 4** for a list of the monitors and their corresponding connectors. The following sections fully describe the rear panel connectors for the MPE series LCD monitor.

5.4.2 VGA Connector

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

PIN	DESCRIPTION	PIN	DESCRIPTION	PIN	DESCRIPTION

1	RED	6	GROUND	11	NC
2	GREEN	7	GROUND	12	DDCDAT
3	BLUE	8	GROUND	13	HSYNC
4	NC	9	NC	14	VSYNC
5	GROUND	10	GROUND	15	DDCCLK

Table 5-1: VGA Connector Pinouts

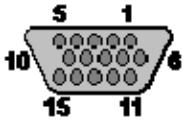

Figure 5-2: VGA Connector

5.4.3 DVI-D Connector

Use the rear panel standard 24-pin female DVI-D connector to connect the monitor to the system graphics interface.

PIN	DESCRIPTION	PIN	DESCRIPTION	PIN	DESCRIPTION
1	TMDS Data2-	9	TMDS Data1-	17	TMDS Data0-
2	TMDS Data2+	10	TMDS Data1+	18	TMDSData0+
3	TMDS Data2/4 Shield	11	TMDS Data1/3 Shield	19	TMDS Data0/5 Shield
4	TMDS Data4-	12	TMDS Data3-	20	TMDS Data5-
5	TMDS Data4+	13	TMDS Data3+	21	TMDS Data5+
6	DDC Clock [SCL]	14	+5 V Power	22	TMDS Clock Shield
7	DDC Data [SDA]	15	Ground (for +5 V)	23	TMDS Clock +
8	Analog vertical sync	16	Hot Plug Detect	24	TMDS Clock -

Table 5-2: DVI-D Connector Pinouts

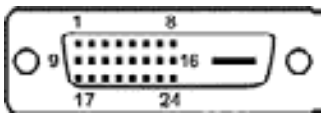

Figure 5-3: DVI-D Connector

5.4.4 12V Power Connector

Use the rear panel +12V DC jack to connect the monitor to a power source.

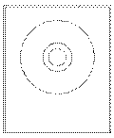

Figure 5-4: 12V Power Connector

5.4.5 RS-232 Touch Panel Connector

Use the rear panel standard RS-232 DB-9 female touch panel connector to connect the monitor to the system graphics interface.

PIN	DESCRIPTION	PIN	DESCRIPTION
1	DCD1	6	CTS1
2	DSR1	7	DTR1
3	RX1	8	RI1
4	RTS1	9	GND
5	TX1		

Table 5-3: RS-232 Touch Panel Connector Pinouts

Figure 5-5: RS-232 Touch Panel Connector

5.4.6 USB Touch Panel Connector

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

PIN	DESCRIPTION	PIN	DESCRIPTION
1	VCC	5	VCC
2	Data-	6	Data-
3	Data+	7	Data+
4	GND	8	GND

Table 5-4: USB Touch Panel Connector Pinouts

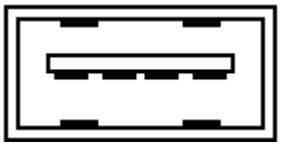

Figure 5-6: USB Touch Panel Connector

5.4.7 Optional DC Power Connector

Use the rear panel 3-pin terminal block DC power connector to connect the monitor to a DC power source (DG models).

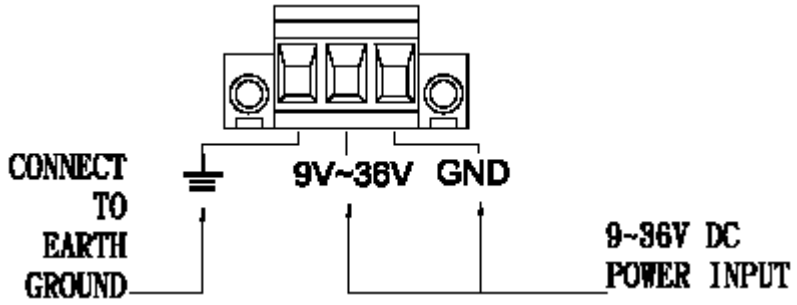

Figure 5-7: DC Power Connector

5.5 Mounting the Monitor

The MPE series LCD monitor can be mounted in a panel, cabinet, rack, DIN rail or wall. The monitor can also be mounted on a monitor arm or stand. The mounting methods are described below.

CAUTION:

When mounting the monitor take care to tighten the retention screws or bolts until fully secure, but do not over tighten. Over tightening the retention screws or bolts may cause them to become stripped, rendering them useless.

5.5.1 Panel Mounting

Each model of the MPE series LCD monitor has a series of mounting slots located on the top and bottom panel for mounting the monitor to a panel.

NOTE:

The MPE 06 monitor requires two special mounting brackets for installation into a panel. Refer to ***Section 5.5.1.2*** *for details.*

Table 5-5 lists the number of mounting clamps required to mount the monitor to a panel.

Model	Mounting Clamps
MPE 12	10
MPE 10	10
MPE 08	8

Table 5-5: Panel Mounting Clamps

5.5.1.1 Standard Panel Mounting

The standard panel mounting procedure applies to the following MPE series LCD monitors:

- MPE 12
- MPE 10
- MPE 08

To mount the MPE series LCD monitor into a panel, please follow the steps below.

Step 1: Select the position on the panel to mount the monitor.

Step 2: Cut out a section of the panel that corresponds to the rear panel dimensions of the monitor. Take care that the panel section that is cut out is smaller than the overall size of the metal frame that surrounds the monitor but just large enough for the rear panel of the monitor to fit through (**Figure 5-8**).

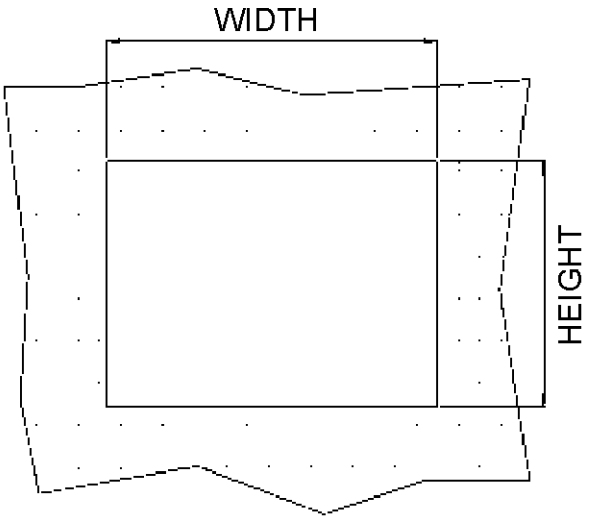

Figure 5-8: Panel Opening

Step 3: Slide the monitor through the hole until the metal frame is flush against the panel (**Figure 5-9**).

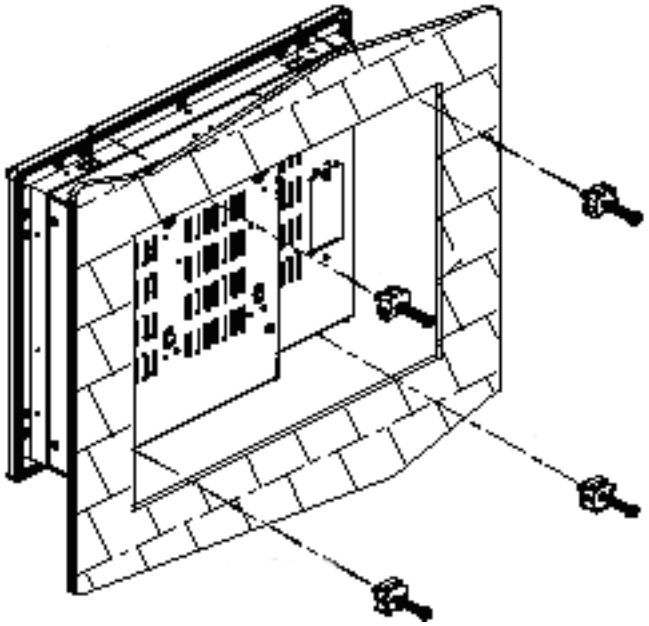

Figure 5-9: Insert the Monitor

Step 4: Insert the panel mounting clamps into the pre-formed holes along the edges of the monitor, behind the metal frame. Refer to the mounting kit packing list for the required number of mounting clamps.

Figure 5-10: Panel Mounting Clamp Position

Step 5: Tighten the screws that pass through the panel mounting clamps until the plastic caps at the front of all the screws are firmly secured to the panel (**Figure 5-10**).

5.5.1.2 MPE 06 Panel Mounting

To mount the MPE 06 monitor into a panel, follow steps one through three of the standard panel mounting procedure (**Section 5.5.1.1**), then continue using the steps below.

Step 1: Secure the panel mounting clips to either side of the monitor using the retention screws supplied in the mounting kit pack (**Figure 5-11**).

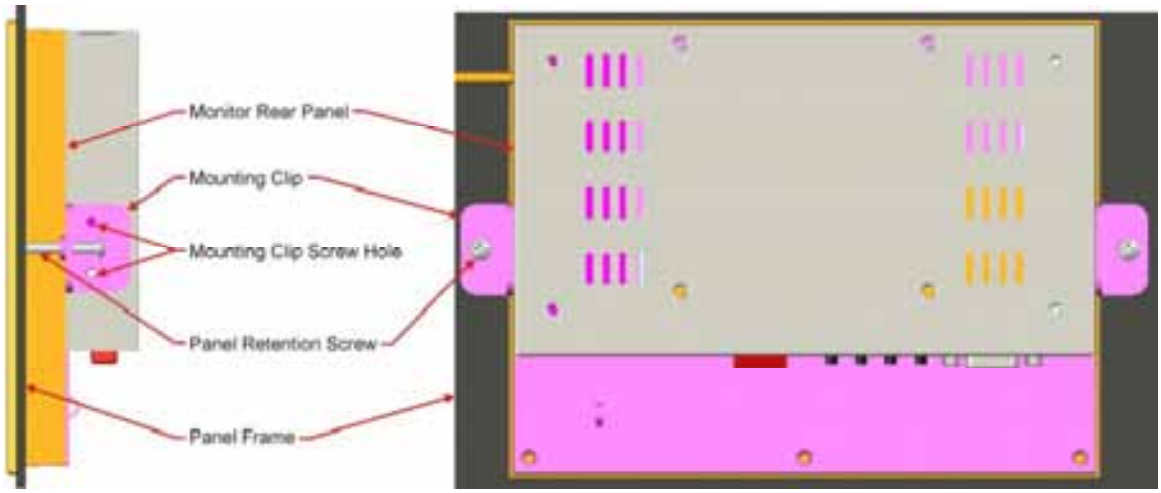

Figure 5-11: MPE 06 Panel Mounting

Step 2: Tighten the panel retention screws that pass through the panel mounting clips until the plastic caps at the front of all the screws are firmly secured to the panel (**Figure 5-11**).

5.5.2 Cabinet and Rack Installation

Each model of the MPE series LCD monitor has a series of holes located on the rear of the front panel for mounting the monitor to a rack or cabinet.

NOTE:

1. The MPE 08 monitor uses panel mounting clamps for installation into a rack

*or cabinet. Refer to **Section 5.5.1.1** for details.*

*2. The MPE 06 monitor uses panel mounting clamps for installation into a rack or cabinet. Refer to **Section 5.5.1.2** for details.*

5.5.2.1 Standard Cabinet and Rack Installation

The standard cabinet/rack mounting procedure applies to the following MPE series LCD monitors:

- MPE 12
- MPE 10

To mount the MPE series LCD monitor into a cabinet/rack, please follow the steps below.

Step 1: The back of the metal frame surrounding the MPE series LCD monitor has several retention screw holes for a cabinet/rack installation bracket.

NOTE:

When purchasing a cabinet/rack installation bracket, make sure it is compatible with both the monitor and the cabinet/rack into which the monitor is installed.

Step 2: Slide the monitor through the cabinet/rack bracket until the rear side of the monitor frame is flush against the front of the bracket.

Step 3: Make sure the retention screw holes at the rear of the monitor frame are aligned with the retention screw holes in the cabinet/rack bracket.

Step 4: Secure the cabinet/rack bracket to the monitor by inserting and tightening the retention screws (**Figure 5-12**).

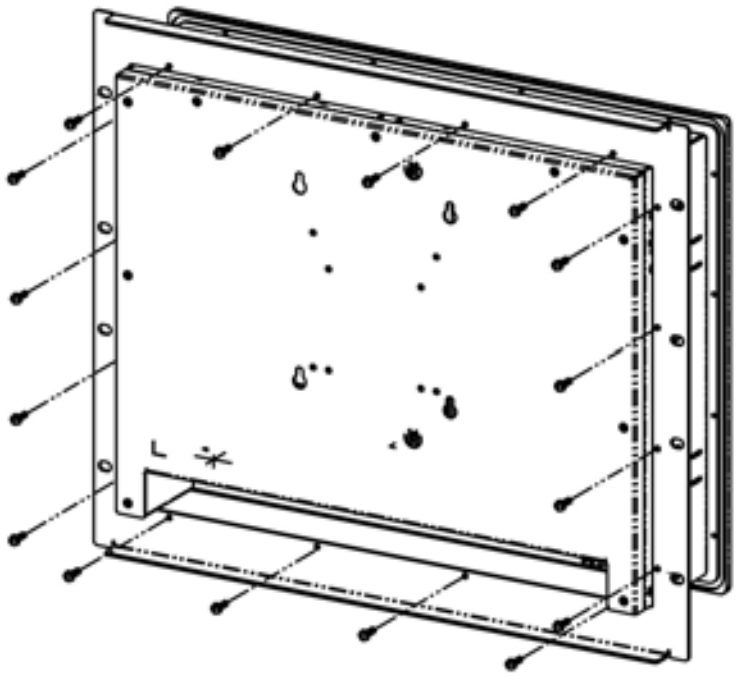

Figure 5-12: Secure the Cabinet/Rack Bracket

Step 5: Slide the monitor with the attached cabinet/rack bracket into a rack or cabinet (**Figure 5-13**).

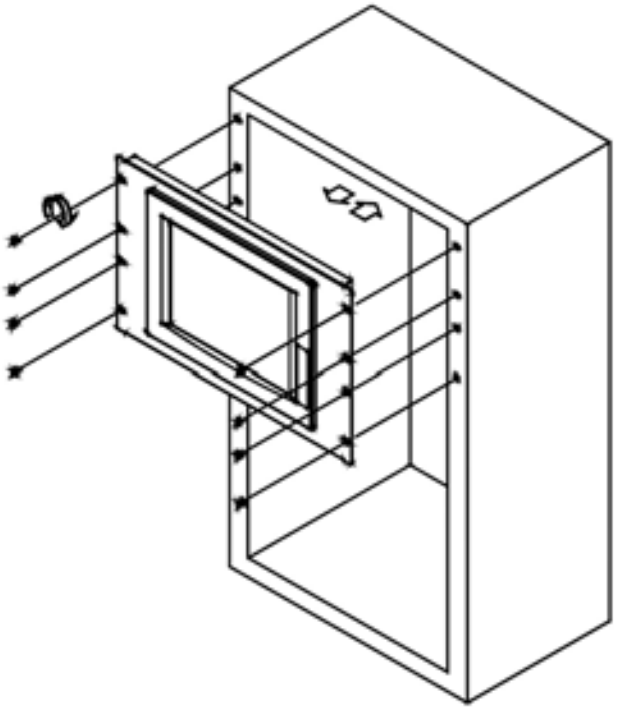

Figure 5-13: Install into a Cabinet/Rack

Step 6: Once the monitor with the attached cabinet/rack has been properly inserted into the rack or cabinet, secure the front of the rack/cabinet bracket to the front of the rack or cabinet (**Figure 5-13**).

5.5.2.2 MPE 08 and MPE 06 Cabinet and Rack Installation

Use the standard panel mounting procedure (**Section 5.5.1.1**) to mount the MPE 08 monitor into a cabinet/rack and use the MPE 06 panel mounting procedure (**Section 5.5.1.2**) to mount the MPE 06 monitor into a cabinet/rack.

5.5.3 DIN Rail Installation

The MPE 08 and MPE 06 have four holes located on the rear panel for mounting the monitor to a DIN rail clamp. To mount the MPE series LCD monitor onto a DIN rail, please follow the steps below.

Step 1: Attach the DIN rail mounting bracket to the rear of the monitor. Secure the bracket to the monitor with the supplied retention screws (**Figure 5-14**).

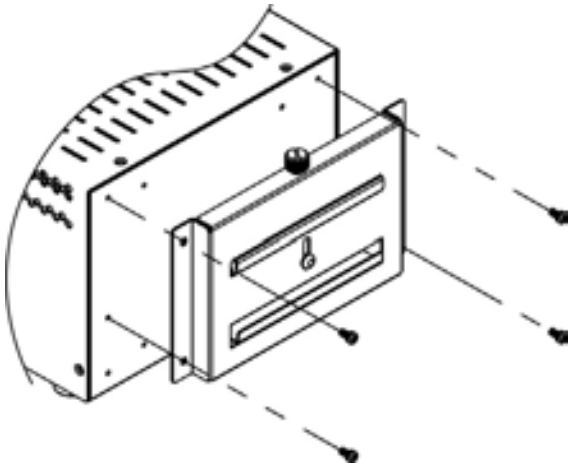

Figure 5-14: DIN Rail Mounting Bracket

Step 2: Make sure the inserted screw in the center of the bracket is at the lowest position of the elongated hole (**Figure 5-15**).

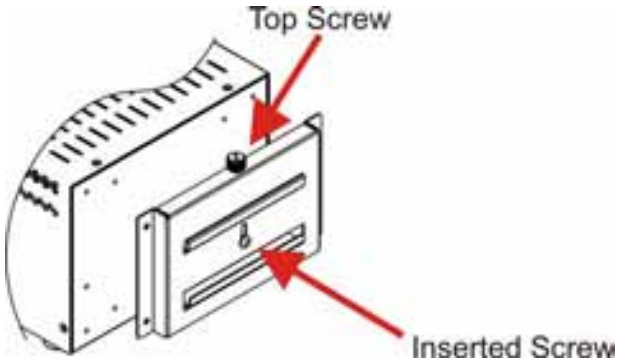

Figure 5-15: Screw Locations

Step 3: Place the DIN rail flush against the back of the mounting bracket making sure the edges of the rail are between the upper and lower clamps (**Figure 5-16**).

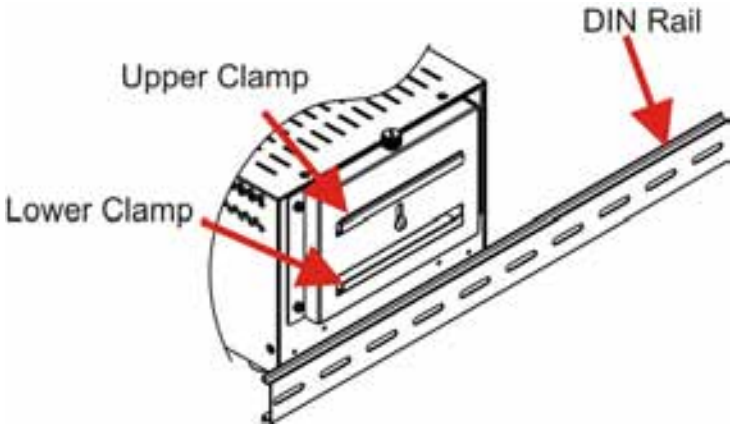

Figure 5-16: Mounting the DIN RAIL

Step 4: Secure the DIN rail to the mounting bracket by turning the top screw clockwise. This draws the lower clamp up and secures the monitor to the DIN rail (**Figure 5-17**).

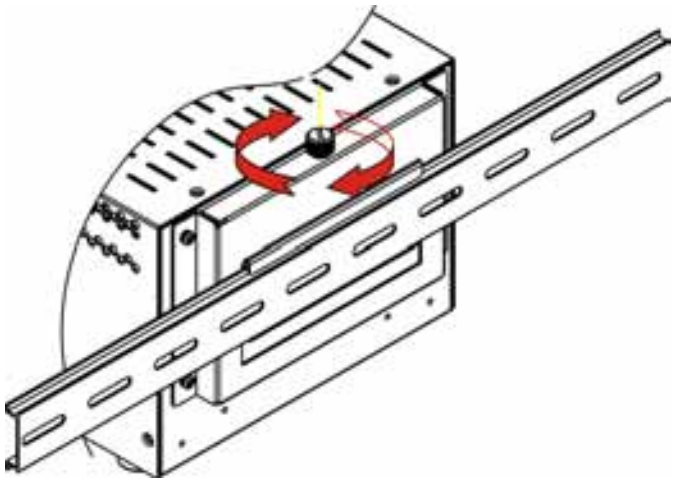

Figure 5-17: Secure the Assembly to the DIN Rail

5.5.4 Wall Mounting

CAUTION:

Due to safety concerns, it is highly recommended to use the VESA mounting kits provided by CyberResearch, Inc. for wall and arm mounting. If the VESA mounting kit is purchased separately, please make sure the mounting kit is UL-listed.

Each model of the MPE series LCD monitor has four holes located on the rear panel for mounting the monitor to a wall. To mount the MPE series LCD monitor onto a wall, please follow the steps below.

Step 1: Select a location on the wall for the wall-mounting bracket.

Step 2: Carefully mark the locations of the four bracket screw holes on the wall.

Step 3: Drill four pilot holes at the marked locations on the wall for the bracket retention screws.

Step 4: Align the wall-mounting bracket screw holes with the pilot holes.

Step 5: Secure the mounting-bracket to the wall by inserting the retention screws into the four pilot holes and tightening them (**Figure 5-18**).

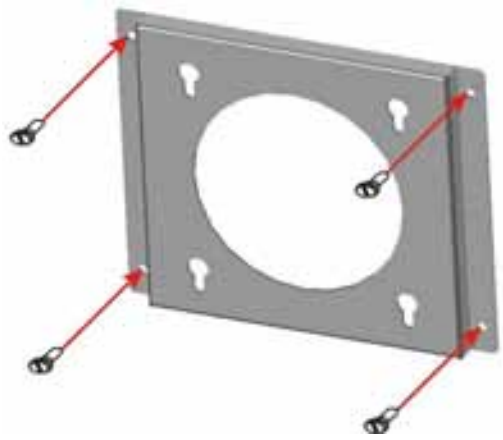

Figure 5-18: Wall-mounting Bracket

Step 6: Insert the four monitor mounting screws (M4 screws) provided in the wall mounting kit into the four screw holes on the real panel of the monitor and tighten until the screw shank is secured against the rear panel (**Figure 5-19**).

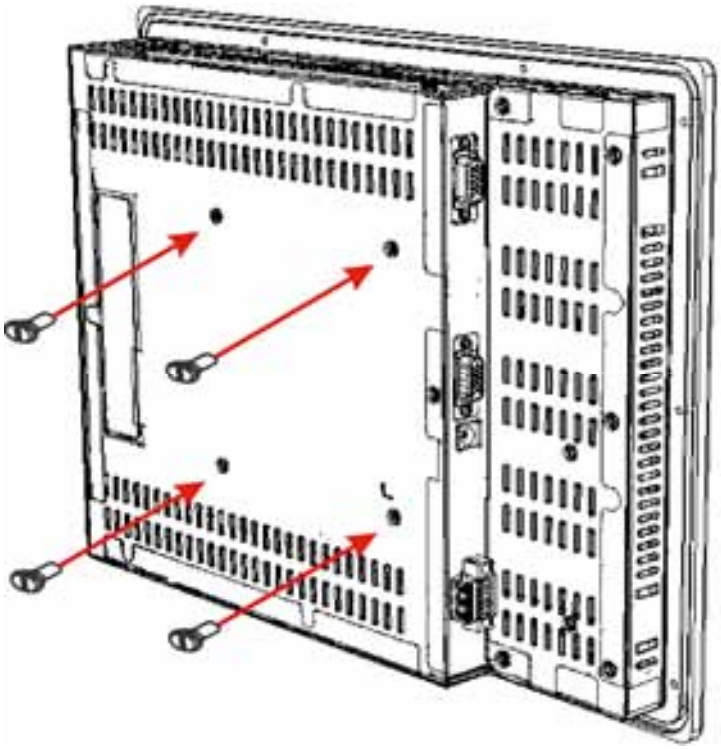

Figure 5-19: Monitor Support Screws

Step 7: Align the mounting screws on the monitor rear panel with the mounting holes on the bracket.

Step 8: Carefully insert the screws through the holes and gently pull the monitor downwards until the monitor rests securely in the slotted holes (**Figure 5-20**). Ensure that all four of the mounting screws fit snuggly into their respective slotted holes.

NOTE:

In the diagram below the bracket is already installed on the wall.

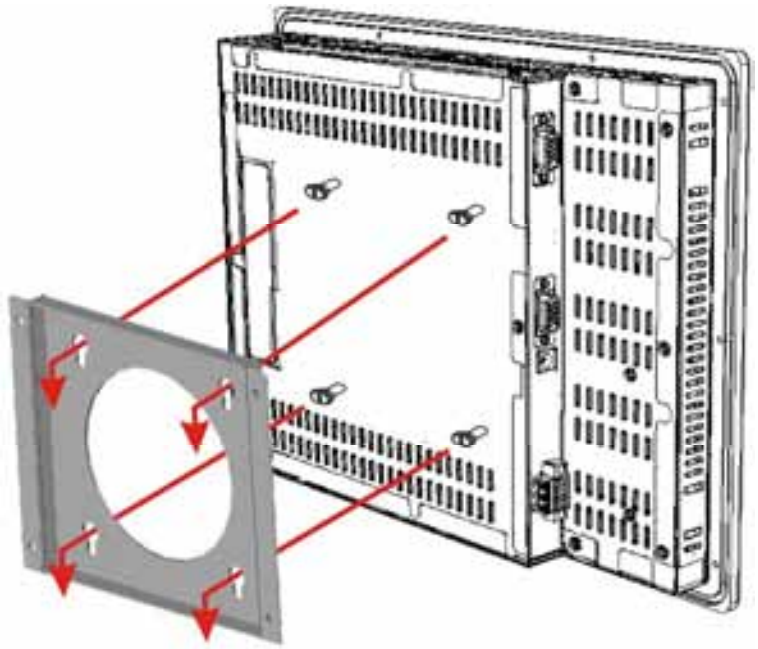

Figure 5-20: Wall Mounting the Monitor

5.5.5 Monitor Stand Installation

The MPE series LCD monitor has Video Electronics Standards Association (VESA) standard mounting holes tapped into the rear panel. The standard holes are M4 set at 100m x 100mm apart (**Figure 5-21**).

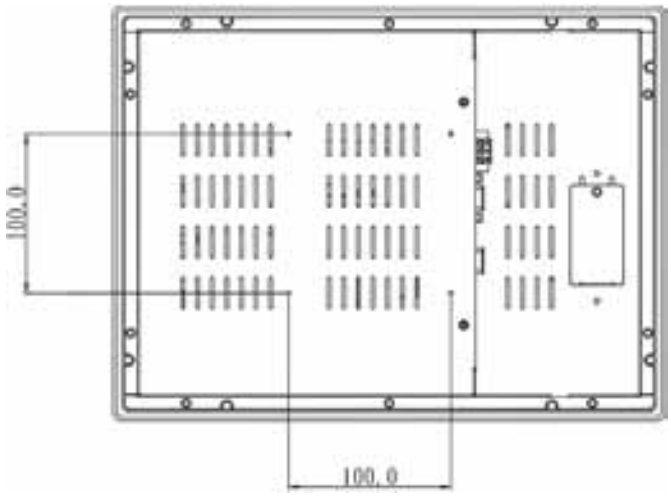

Figure 5-21: VESA Mounting Holes

The monitor stand mounting plate has a matching VESA hole pattern. To mount the MPE series LCD monitor onto a stand, please follow the steps below.

Step 1: Line up the threaded holes on the monitor rear panel with the screw holes on the monitor stand mounting plate.

Step 2: Secure the monitor to the stand with the supplied retention screws (**Figure 5-22**).

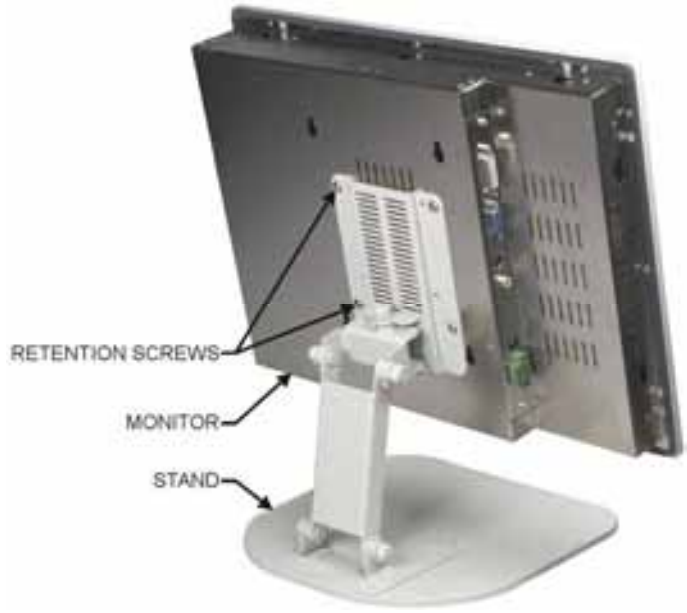

Figure 5-22: Monitor Stand Mounting

5.5.6 Monitor Arm Installation

The MPE series LCD monitor has Video Electronics Standards Association (VESA) standard mounting holes tapped into the rear panel. The standard holes are M4 set at 100m x 100mm apart (**Figure 5-21**). The monitor arm mounting plate has a matching VESA hole pattern. To mount the MPE series LCD monitor onto a monitor arm, please follow the steps below.

Step 1: Line up the threaded holes on the monitor rear panel with the screw holes on the monitor arm mounting plate.

Step 2: Secure the monitor to the arm with the supplied retention screws (**Figure 5-23**).

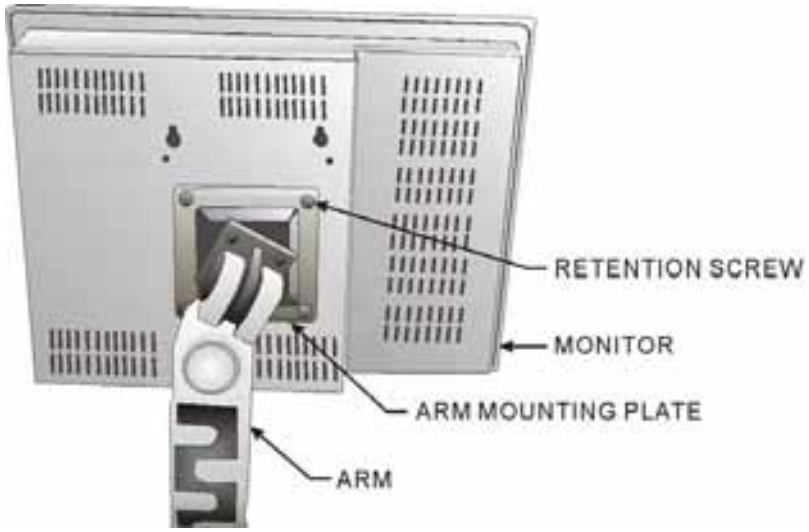

Figure 5-23: Monitor Arm Mounting

Chapter

6

On-Screen-Display (OSD) Controls

6.1 User Mode OSD Structure

6.1.1 OSD Buttons

There are several on-screen-display (OSD) control buttons oriented either vertically along the right hand side or horizontally along the bottom of the monitor front panel. Refer to **Section 2.2** for availability and orientation of the OSD controls on specific MPE series monitors.

Figure 6-1 shows a typical arrangement of OSD controls for all models of the MPE series LCD monitor except the MPE 06.

Figure 6-1: OSD Control Buttons for All Models Except MPE 06

Figure 6-2 shows the OSD controls for the MPE 06.

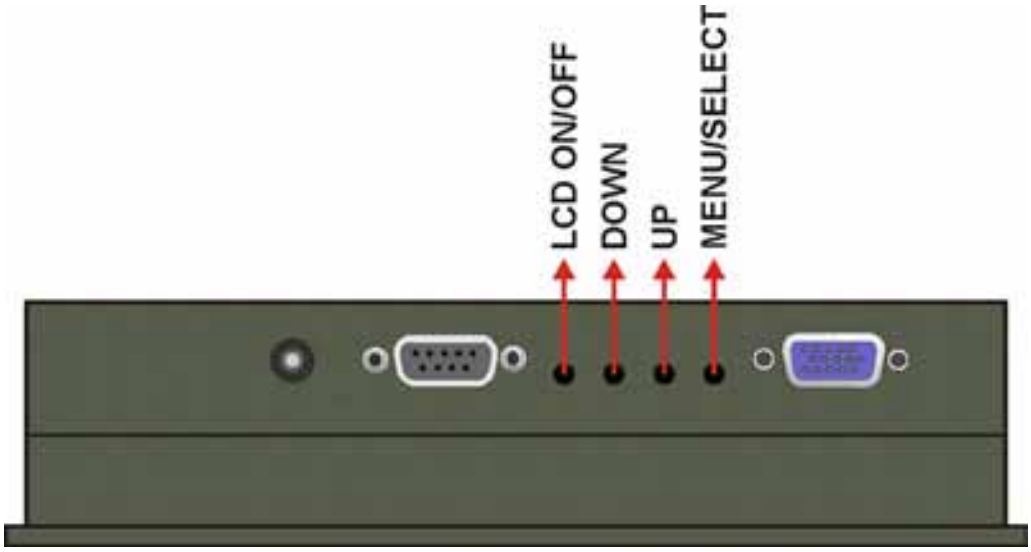

Figure 6-2: MPE 06 OSD Control Buttons

6.1.2 OSD Menu Structure

Table 6-1 shows the OSD menu structure for all models of the SRM series LCD monitor.

Level 0	Level 1	Value
Main Display Features Menu	Brightness	0 to 100
	Contrast	0 to 100
	Clock	0 to 100
	Phase	0 to 100
	H. Position	0 to 100
	V. Position	0 to 100
	Sharpness	1 to 5
Color Menu	6500K	- Preset NTSC value
	7500K	- Preset NTSC value
	9300K	- Preset NTSC value
	Red	RGB values from 0 to 100
	Green	RGB values from 0 to 100
	Blue	RGB values from 0 to 100

OSD Menu	**OSD Time Out**	**0 to 60 sec**
	OSD Position	**1 to 5**
	OSD Transparency	**20, 40, 60, 80, 100**
	Factory Reset	**Select**
	Auto Adjust	**Select**
	Auto Color	**Select**
	Gamma	**Off, On**
Exit Menu	**Exit**	**Select**

Table 6-1: OSD Menus

6.2 Using the OSD

OSD menu options are described below.

6.2.1 Main Display Features

Main display features are shown in **Figure 6-3**.

Figure 6-3: Main Display Features

Brightness	The brightness option adjusts the brightness of screen. This function adjusts the offset value of ADC. Setting this value too high or too low will affect the quality of image. When the auto- dimming function is turned on, the brightness control is not effective.
Contrast	This function adjusts the gain value of ADC. Adjusting this value too high or too low will worsen the quality of image.
Clock	Adjusts the width of the display screen.
Phase	Adjusts the input signal.
H. Position	Adjusts the horizontal position of the display screen.
V. Position	Adjusts the vertical position of the display screen
Sharpness	Adjust the sharpness of the display

6.2.2 Color

Color options are shown in **Figure 6-4**.

Figure 6-4: Color Options

The Color menu fine-tunes the palette of color hues for the LCD.

6500k	NTSC standard Kelvin
7500k	NTSC standard Kelvin
9300k	NTSC standard Kelvin
User	This item allows fine-tuning the balance among Red, Green, and Blue color hues if images look garish or unrealistic.

6.2.3 OSD Configurations

The OSD configurations are shown in **Figure 6-5**.

Figure 6-5: OSD Configurations Menu

OSD Configurations are described below.

OSD Time Out	Determines how many seconds the OSD screen stays on screen before it disappears when OSD is left unattended.
OSD Position	Adjusts the OSD position on the screen. Position 1 is in the upper left of the screen, position 2 in the upper right and position 3 in the center.
OSD Transparency	Adjust the transparency of the OSD menu background.
Factory Reset	Restores the default OSD settings. Note that this will restore all default display settings.
Auto Adjust	Automatically adjusts the position of the display screen
Auto Color	Automatically adjusts the color settings.

Chapter

7

Software Drivers

7.1 Introduction

The touch panel controller enables analog resistive touch panels for four-wire, five-wire & eight-wire models. The controller directly communicates with the PC system through the touch panel communications interface. The controller design is superior in sensitivity, accuracy, and friendly operation. The touch panel driver emulates the left mouse button and the right mouse button functions.

The touch panel driver supports the following operating systems:

- Microsoft® Windows® versions:
  - Microsoft® Windows® 2000
  - Microsoft® Windows® XP
  - Microsoft® Windows® 2003
  - Microsoft® Windows® 2008
  - Microsoft® Windows® Vista
  - Microsoft® Windows® 7
- Microsoft® Windows® CE versions:
  - Microsoft® Windows® CE 4.2
  - Microsoft® Windows® CE 5.0
  - Microsoft® Windows® CE 6.0
- DOS

Driver installation is described below.

7.2 RS-232 or USB Touch Screen

Before installing the driver, connect the MPE Series monitor to the motherboard. The MPE Series monitors support touch screen modality through an RS-232 or USB interface connection. Decide through which interface the touch screen is to be controlled.

- **RS-232 Interface:** If the touch screen interface connection is an RS-232 connection, connect the RS-232 connector on the single board computer to the DB-9 connector of the MPE Series monitor.

- **USB Interface:** If the touch screen interface connection is a USB connection,

connect the USB connector on the single board computer to the external USB port connector of the MPE Series monitor.

7.3 Touch Panel Driver Installation

WARNING:

Before the touch screen driver is installed, make sure the system is connected to the monitor with a USB cable or an RS-232 null cable. Also, make sure the VGA connector on the system is connected to the VGA connector on the bottom of the monitor.

To install the touch panel driver for the MPE Series, please follow the instructions below:

Step 1: **Connect the MPE Series monitor to the single board computer**. See above.

Step 2: **Install the driver DVD**. Install the driver DVD into the system to which the MPE Series monitor is connected.

Step 3: When the DVD welcome screen appears, select the **Software/Drivers** option as shown in **Figure 7-1**.

Figure 7-1: Select Software/Drivers

Step 4: When the Software Installation screen appears, select **Touchscreen Drivers** as shown in **Figure 7-2**.

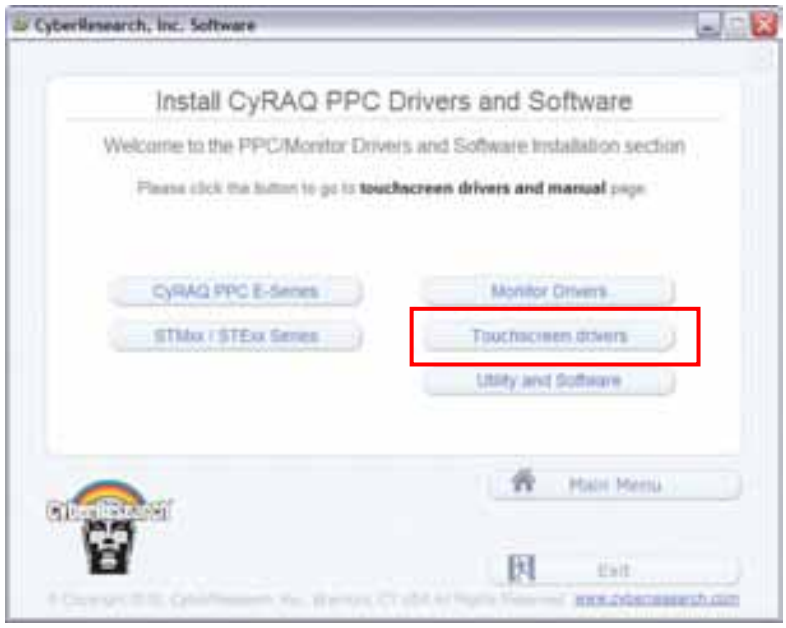

Figure 7-2: Select Touchscreen Drivers

Step 5: When the Touchscreen Drivers Installation screen appears, select **PenMount Touch Drivers**.

Figure 7-3: Select PenMount Touch Drivers

Step 6: When the PenMount Touch Drivers Installation screen appears, select **PenMount Touch Drivers**.

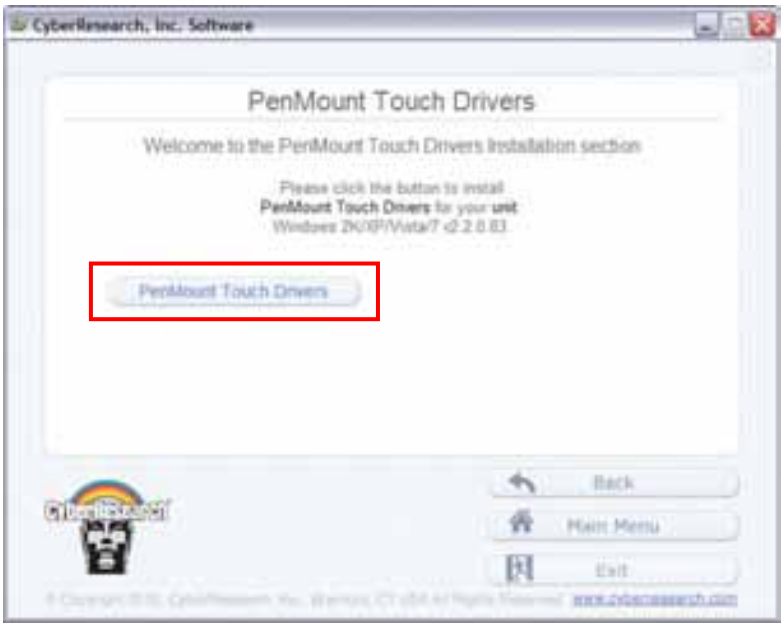

Figure 7-4: Select PenMount Touch Drivers

Step 7: The Welcome screen in **Figure 7-5** appears.

Figure 7-5: Welcome Screen

Step 8: Click **Next** to continue.

Step 9: The license agreement in **Figure 7-6** appears. Accept the terms of the agreement by clicking **I Agree**.

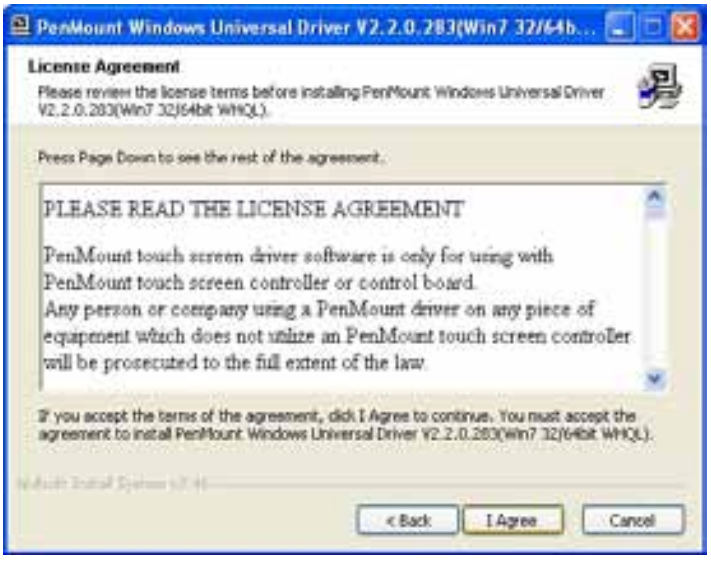

Figure 7-6: License Agreement

Step 10: The installation destination screen appears. See **Figure 7-7**. Click **Install**.

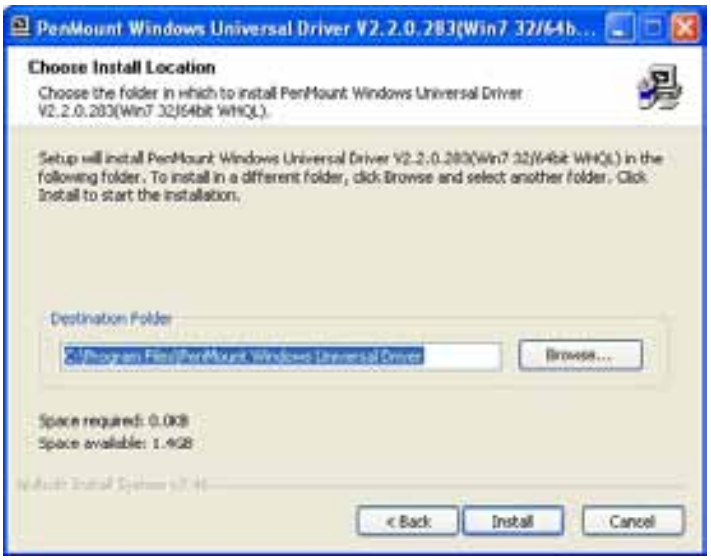

Figure 7-7: Initiate Install

Step 11: The installation of the program begins. See **Figure 7-8**.

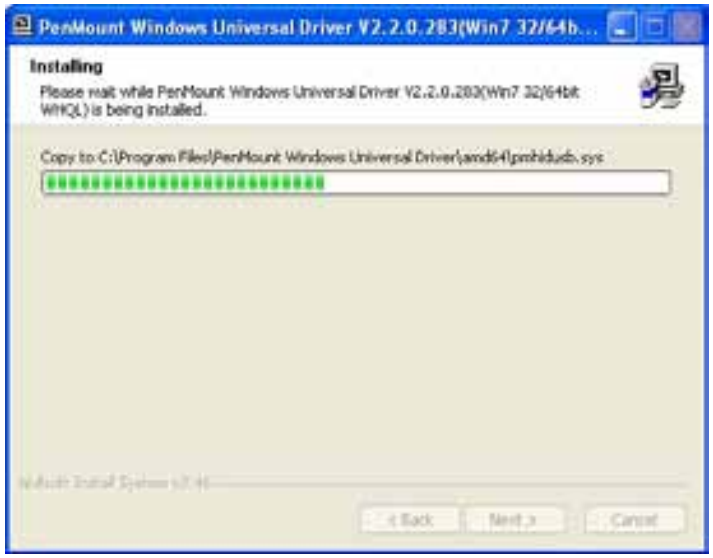

Figure 7-8: Installation Starts

Step 12: When the installation is complete, the complete screen appears. See **Figure 7-9**.

To complete the installation process click **Finish**.

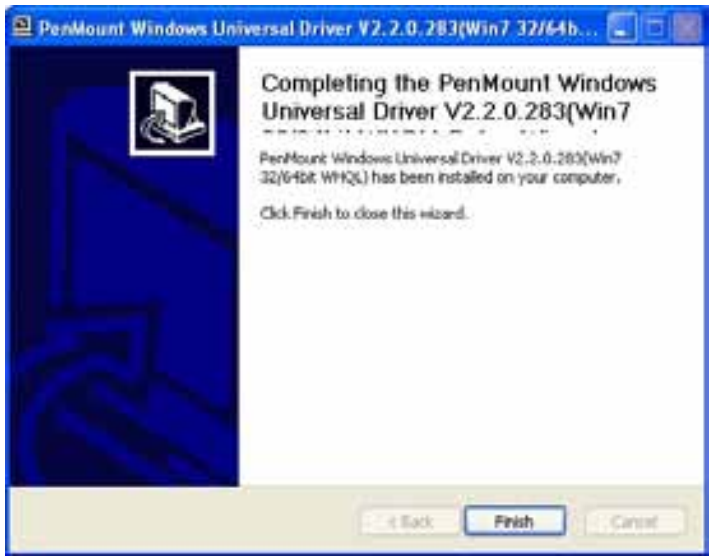

Figure 7-9: Finish Installation

7.4 Change the Touch Screen Interface

If the touch screen interface must be changed from an RS-232 interface to a USB interface or, from a USB interface to an RS-232 interface, the following steps must be followed.

Step 1: Uninstall the touch screen driver

Step 2: Remove the interface cable i.e. remove the RS-232 cable or the USB cable

Step 3: Install the new cable i.e. install the USB cable or the RS-232 cable.

Step 4: Reinstall the driver DVD as described above.

7.5 Calibrating the Touch Screen

To calibrate the touch screen cursor with the motion of the touch screen pen (or finger), please follow the steps below:

Step 1: Make sure the system is properly connected through an RS-232 or a USB interface to the MPE Series monitor.

Step 2: Make sure the touch screen driver is properly installed.

Step 3: Locate the PenMount Monitor icon in the bottom left corner of the screen.

Figure 7-10: PenMount Monitor Icon

Step 4: Click the icon. A pop up menu appears. See **Figure 7-11**.

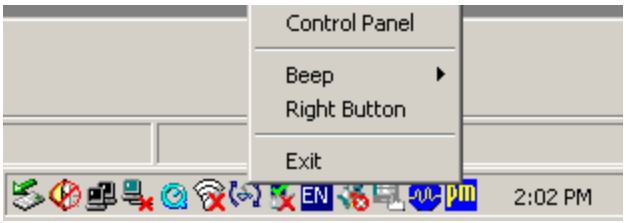

Figure 7-11: PenMount Monitor Popup Menu

Step 5: Click Control Panel in the pop up menu shown in **Figure 7-11.**

Step 6: The configuration screen in **Figure 7-12** appears.

Figure 7-12: Configuration Screen

Step 7: Double click the PenMount 6000 icon as shown in **Figure 7-12**.

Step 8: The calibration initiation screen in **Figure 7-13** appears.

Step 9: Select the Standard Calibration button as shown in **Figure 7-13**.

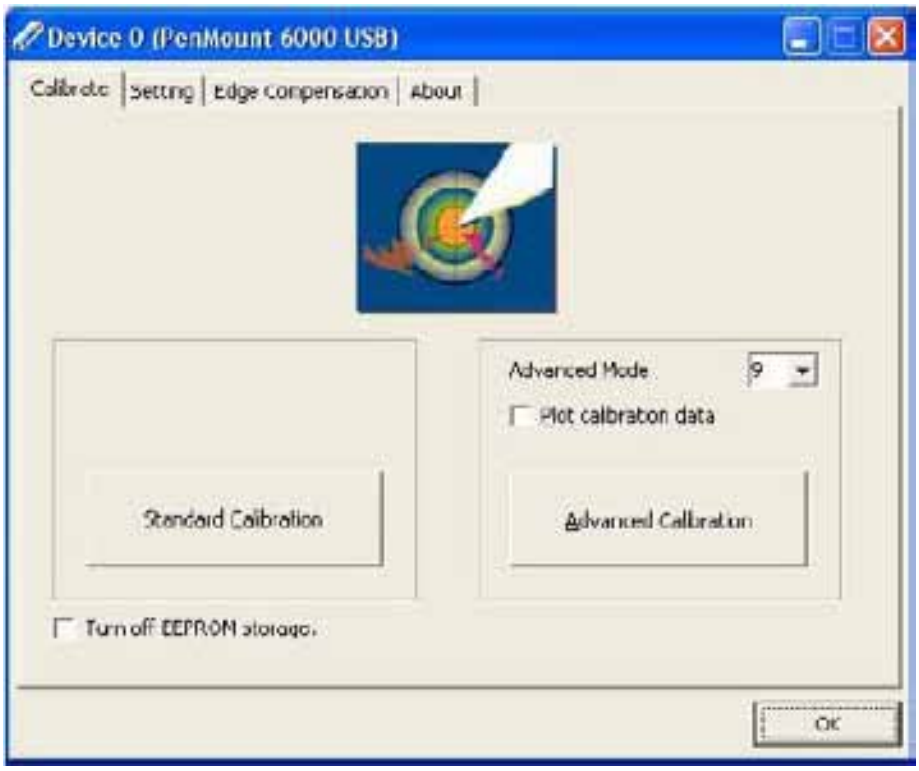

Figure 7-13: Calibration Initiation Screen

Step 10: The calibration screen in is shown. See **Figure 7-14**.

Figure 7-14: Calibration Screen

Step 11: Follow the instructions. The user is asked touch the screen at five specified points after which the screen is calibrated.

Chapter

8

Gasket Replacement

8.1 Gasket Replacement

A gasket used for a long time may gradually lose its ability to protect the monitor from fluids and vapors; scratches or dirt may also accumulate. It is recommended that the gasket be replaced yearly.

NOTE:

If the monitor is mounted vertically, first remove it and place it on a flat, level surface with the display screen facing down before changing the gasket.

Step 1: Remove the old gasket from the sides of the monitor.

Step 2: Attach the new gasket to the monitor. Make sure the gasket fits precisely into the groove along the edges of the monitor's front panel (**Figure 8-1**).

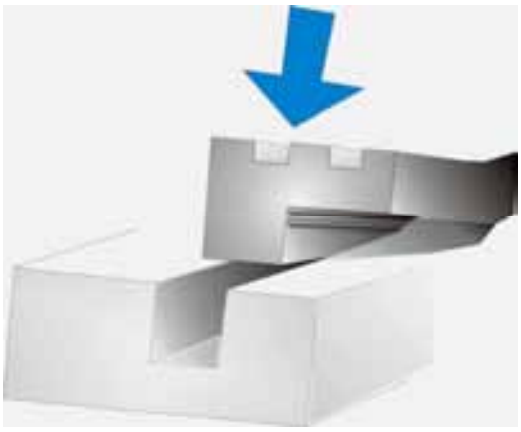

Figure 8-1: Gasket Replacement

NOTE:

Compliance with the IP 65 standard depends on correct installation of the gasket. Be sure to check that the gasket is properly installed after changing it.

Appendix

A

Safety Precautions

WARNING:

The precautions outlined in this chapter should be strictly followed. Failure to follow these precautions may result in permanent damage to the MPE series.

A.1 Safety Precautions

Please follow the safety precautions outlined in the sections that follow:

A.1.1 General Safety Precautions

Please ensure the following safety precautions are adhered to at all times.

- ***Follow the electrostatic precautions*** outlined below whenever the MPE series is opened.
- ***Make sure the power is turned off and the power cord is disconnected*** whenever the MPE series is being installed, moved or modified.
- ***Do not apply voltage levels that exceed the specified voltage range***. Doing so may cause fire and/or an electrical shock.
- ***Electric shocks can occur*** if the MPE series chassis is opened when the MPE series is running.
- ***Do not drop or insert any objects*** into the ventilation openings of the MPE series.
- ***If considerable amounts of dust, water, or fluids enter the*** MPE series, turn off the power supply immediately, unplug the power cord, and contact CyberResearch, Inc
- **DO NOT**:
  - Drop the MPE series against a hard surface.
  - Strike or exert excessive force onto the LCD panel.
  - Touch any of the LCD panels with a sharp object
  - In a site where the ambient temperature exceeds the rated temperature

A.1.2 Anti-static Precautions

WARNING:

Failure to take ESD precautions during the installation of the MPE series may result in permanent damage to the MPE series and severe injury to the user.

Electrostatic discharge (ESD) can cause serious damage to electronic components, including the MPE series. Dry climates are especially susceptible to ESD. It is therefore critical that whenever the MPE series is opened and any of the electrical components are handled, the following anti-static precautions are strictly adhered to.

- ***Wear an anti-static wristband***: Wearing a simple anti-static wristband can help to prevent ESD from damaging any electrical component.
- ***Self-grounding***: Before handling any electrical component, touch any grounded conducting material. During the time the electrical component is handled, frequently touch any conducting materials that are connected to the ground.
- ***Use an anti-static pad***: When configuring or working with an electrical component, place it on an antic-static pad. This reduces the possibility of ESD damage.
- ***Only handle the edges of the electrical component***: When handling the electrical component, hold the electrical component by its edges.

A.2 Maintenance and Cleaning Precautions

When maintaining or cleaning the MPE series, please follow the guidelines below.

A.2.1 Maintenance and Cleaning

Prior to cleaning any part or component of the MPE series, please read the details below.

- Except for the LCD panel, never spray or squirt liquids directly onto any other components. To clean the LCD panel, gently wipe it with a piece of soft dry cloth or a slightly moistened cloth.

- The interior of the MPE series does not require cleaning. Keep fluids away from the MPE series interior.
- Be cautious of all small removable components when vacuuming the MPE series.
- Turn the MPE series off before cleaning the MPE series.
- Never drop any objects or liquids through the openings of the MPE series.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the MPE series.
- Avoid eating, drinking and smoking within vicinity of the MPE series.

A.2.2 Cleaning Tools

Some components in the MPE series may only be cleaned using a product specifically designed for the purpose. In such case, the product will be explicitly mentioned in the cleaning tips. Below is a list of items to use when cleaning the MPE series.

- Cloth – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the MPE series.
- Water or rubbing alcohol – A cloth moistened with water or rubbing alcohol can be used to clean the MPE series.
- Using solvents – The use of solvents is not recommended when cleaning the MPE series as they may damage the plastic parts.
- Vacuum cleaner – Using a vacuum specifically designed for computers is one of the best methods of cleaning the MPE series. Dust and dirt can restrict the airflow in the MPE series and cause its circuitry to corrode.
- Cotton swabs - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas.
- Foam swabs - Whenever possible, it is best to use lint free swabs such as foam swabs for cleaning.

Intentionally Blank

Product Service

Diagnosis and Debug

CyberResearch, Inc. maintains technical support lines staffed by experienced Applications Engineers and Technicians. There is no charge to call and we will return your call promptly if it is received while our lines are busy. Most problems encountered with data acquisition products can be solved over the phone. Signal connections and programming are the two most common sources of difficulty. CyberResearch support personnel can help you solve these problems, especially if you are prepared for the call.

To ensure your call's overall success and expediency:

1) Have the phone close to the PC so you can conveniently and quickly take action that the Applications Engineer might suggest.
2) Be prepared to open your PC, remove boards, report back-switch or jumper settings, and possibly change settings before reinstalling the modules.
3) Have a volt meter handy to take measurements of the signals you are trying to measure as well as the signals on the board, module, or power supply.
4) Isolate problem areas that are not working as you expected.
5) Have the source code to the program you are having trouble with available so that preceding and prerequisite modes can be referenced and discussed.
6) Have the manual at hand. Also have the product's utility disks and any other relevant disks nearby so programs and version numbers can be checked.

Preparation will facilitate the diagnosis procedure, save you time, and avoid repeated calls. Here are a few preliminary actions you can take before you call which may solve some of the more common problems:

1) Check the PC-bus power and any power supply signals.
2) Check the voltage level of the signal between SIGNAL HIGH and SIGNAL LOW, or SIGNAL+ and SIGNAL– . It CANNOT exceed the full scale range of the board.
3) Check the other boards in your PC or modules on the network for address and interrupt conflicts.
4) Refer to the example programs as a baseline for comparing code.

Warranty Notice

CyberResearch, Inc. warrants that this equipment as furnished will be free from defects in material and workmanship for a period of one year from the confirmed date of purchase by the original buyer and that upon written notice of any such defect, CyberResearch, Inc. will, at its option, repair or replace the defective item under the terms of this warranty, subject to the provisions and specific exclusions listed herein.

This warranty shall not apply to equipment that has been previously repaired or altered outside our plant in any way which may, in the judgment of the manufacturer, affect its reliability. Nor will it apply if the equipment has been used in a manner exceeding or inconsistent with its specifications or if the serial number has been removed.

CyberResearch, Inc. does not assume any liability for consequential damages as a result from our products uses, and in any event our liability shall not exceed the original selling price of the equipment.

The equipment warranty shall constitute the sole and exclusive remedy of any Buyer of Seller equipment and the sole and exclusive liability of the Seller, its successors or assigns, in connection with equipment purchased and in lieu of all other warranties expressed implied or statutory, including, but not limited to, any implied warranty of merchant ability or fitness and all other obligations or liabilities of seller, its successors or assigns.

The equipment must be returned postage prepaid. Package it securely and insure it. You will be charged for parts and labor if the warranty period has expired.

Returns and RMAs

If a CyberResearch product has been diagnosed as being non-functional, is visibly damaged, or must be returned for any other reason, please call for an assigned RMA number. The RMA number is a key piece of information that lets us track and process returned merchandise with the fastest possible turnaround time.

PLEASE CALL FOR AN RMA NUMBER!

Packages returned without an RMA number will be refused!

In most cases, a returned package will be refused at the receiving dock if its contents are not known. The RMA number allows us to reference the history of returned products and determine if they are meeting your application's requirements. When you call customer service for your RMA number, you will be asked to provide information about the product you are returning, your address, and a contact person at your organization.

Please make sure that the RMA number is prominently displayed on the outside of the box.

• Thank You •

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