ADP-1190 Display Monitor
User Manual

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Warning!

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

Electric Shock Hazard – Do not operate the machine with its back cover removed. There are dangerous high voltages inside.

Disclaimer

This information in this document is subject to change without notice. In no event shall Aplex Technology Inc. be liable for damages of any kind, whether incidental or consequential, arising from either the use or misuse of information in this document or in any related materials.

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Chapter 1

1.1 Features

- 19” SXGA color TFT LCD monitor
- Heavy-duty steel chassis
- NEMA 4/IP65-compliant aluminum front panel
- OSD on the back
- Long backlight lifetime of 50,000 hours
- Panel or Wall mount
- DVI, composite video and S-video input (optional)
- Power Input: 100~240V AC
- Resistive touch screen (optional)

1.2 Specifications

Display

- Display: 19” SXGA color TFT LCD monitor
- Maximum resolution: 1600 x 1200 with auto phase and auto position
- Maximum colors: 256K
- Dot size (mm): 0.294 x 0.294
- Luminance: 300 cd/m²
- Viewing angle: R/L 160(Typ.), U/D 160(Typ.)
- Backlight lifetime: 50,000 hours
- Control: OSD on the back
- Touch screen: resistive (optional)

Mechanical

- Construction: heavy-duty steel chassis
- NEMA 4/IP65-certified front panel
- Mounting type: panel
- Auto recognition of input signal
- Dimensions(WxHxD): 484x 71.7 x 400mm

Environmental

- Operating temperature: 0 to 45℃ (32 to 113℉)
- Storage temperature: -20 to 60℃ (-4 to 140℉)
- Relative humidity: 10 to 95% @40℃, non-condensing
- Vibration: 1G peak, 10~150Hz
- Shock: 10G peak acceleration (11 msec.duration)
- Certification: CE, FCC Class A

Ordering Information

ADP-1190 19” SXGA industrial display monitor

Option Resistive touch screen

1.3 Dimensions

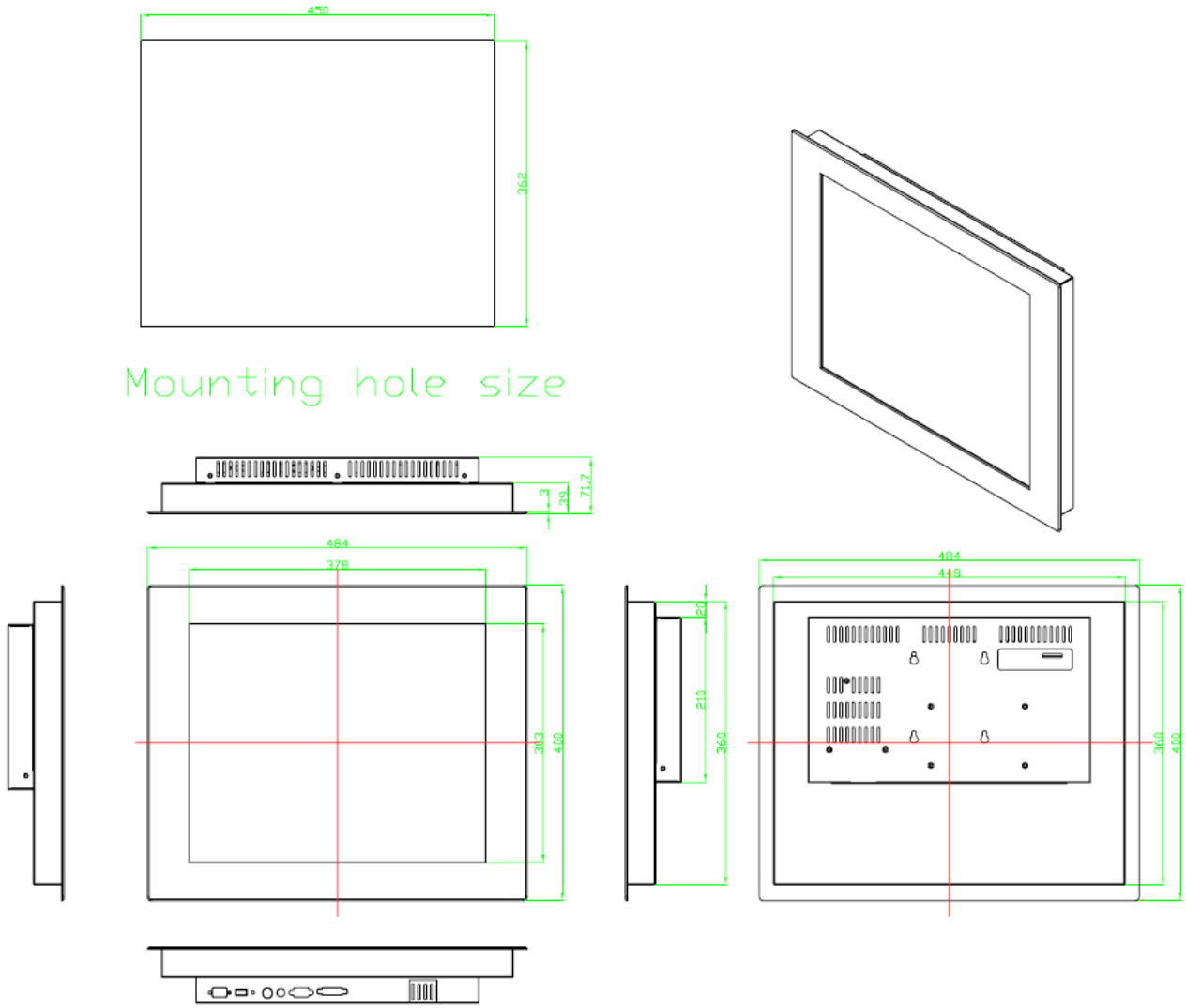


Figure 1.1: Dimensions of the ADP-1190

Figure 1.2: I/O Functions of the ADP-1190

1.4 Brief Description of the ADP-1190

The ADP-1190 is a 19" SXGA color TFT LCD monitor that comes with a dot size of 0.294 x 0.294mm, viewing angle of 160 (H) degrees and 160 (V) degrees, and more outstanding features, thus giving you the best in monitoring and control applications.

The front panel of the display monitor is sealed with gasket for NEMA 4/IP 65 rating when it is panel-mounted in a NEMA rated cabinet or enclosure. It can also be Wall-mounted. It is optional to be equipped with a resistive touch screen.

Figure 1.2: Front View of the ADP-1190

`Figure 1.4: Rear View of ADP-1190

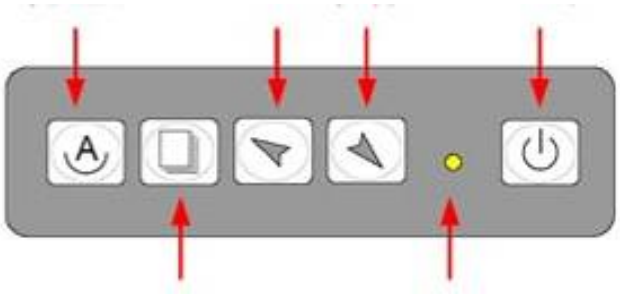
1.5 Display Mode

Display Mode		Hori. Sync (KHz)	Vert. Sync. (Hz)
VGA 640 x 480		31	60
		38	72
		38	75
SVGA 800 x 600		35	56
		38	60
		48	72
		47	75
XGA 1024 x 768		48	60
		56	70
		60	75
SXGA	1152 x 864	68	75
	1280 x 1024	64	60
		80	75

Chapter 2

2.1 Front Panel OSD Functions

Auto Adjust Up/Left Down/Right Power



Menu/Entry Power Indicator

Power switch: To turn ON or OFF the power

Shift the icon to the right side or shift it up

Shift the icon to the left side or shift it down

Menu: To enter OSD menu for related icon and item.

Auto Button: One-touch auto adjustment

1.) Getting into Burn-in Mode

Before setting into a burn-in mode, first disconnect the AC power cord. Then press (don't let them go) the buttons until the AC power cord is connected and the "RGB" appears on the top left corner of your screen. Now it can be put into the burn-in mode for changing colors.

2.) Getting Out of Burn-in Mode

Before getting out of the burn-in mode, please first disconnect the AC power cord. Then press the button (If not workable, press the button and don't let them go) until the AC power cord is connected. Please don't let your fingers go until the AC power cord is connected again and the wording of "RGB" appears on the top left corner of your screen, and wait for 3 seconds. Under the non-signal entry situation, if **Cable Not Connected** is seen, exit is thus successfully made.

2.2 OSD Controls

To make any adjustment, select the following:

1. Press (Menu) to show the OSD menu or disable the OSD menu.
2. Select the icon that you wish to adjust with the (/ or +/-) key in the menu.
3. Press (Menu) and then choose the item with the (/ or +/-) key.
4. Press (Menu) and then adjust the quality with the (/ or +/-) key.

1.) If the “RGB” is still on the top left corner of the screen, press to enter “Miscellaneous” and choose “Reset”, and then **Yes,** and press . When the screen goes black, disconnect power and repeat the above steps.

2.) If the “RGB” is not found, disconnect the AC power cord first. Then press the buttons (don’t let them go) until the AC power cord is connected, and wait for 2 to 3 seconds. When “RGB” appears, repeat the above steps.

3.) Functions of OSD Keys

2.3 Main Menu

In the **Main** menu, there are the following items:

- Color
- Image Setting
- Position
- OSD Menu
- Language
- Misc
- Exit

For **Color**, check out the following:

- Contrast
- Brightness
- Color Adjust
- Color Temp
- Back

For **Image setting**, check out the following:

- Clock
- Phase
- Gamma
- Sharpness
- Back

In the **Position**, there are the following:

- H. Position
- V. Position
- Back

In the **OSD** menu, there are:

- OSD H. Pos.
- OSD V. Pos.
- OSD Timer
- Back

In the **Language** menu, there are:

- English
- Frances
- Germany
- Spanish
- Traditional Chinese
- Simplified Chinese
- Japanese

In the **Misc** menu, there are:

- Signal Source
  Select VGA: Analogue VGA Input
  Select DVI: Digital DVI-D Input
  Select AV: Composite Video Input
  Select SV: S-Video Video Input
- Reset
- Back

Chapter 3

3.1 Optional Touch Screen Features

- RS-232 interface
- Touch controller is DMC9000
- Design for the best touch performance and easy configuration
- PnP or Non-PnP mode selectable
- Design for best cost arrangement
- Supporting 2048x2048 pen device resolution
- 19200 or 9600 baud rate transmission selectable
- Upgraded noise handling mechanism (3 level scheme)
- Fixed and high-speed sampling rate
- Touch screen cable, RS-232 with power cable connectors onboard

3.2 Windows 98/ME Driver Installation for 9036 Controller Board

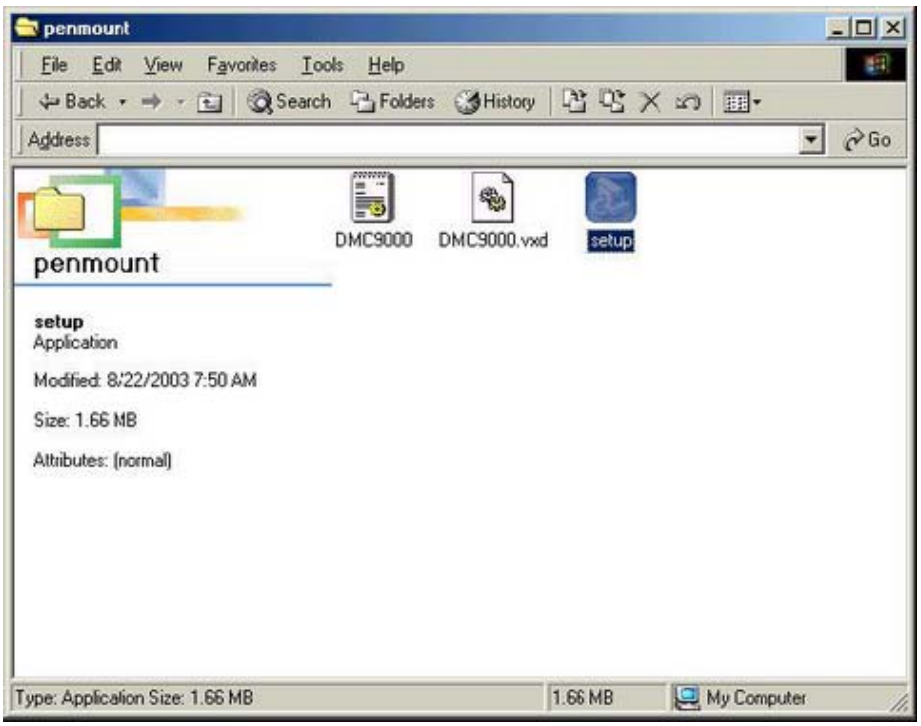
Before installing the Windows 98/ME driver software, you must have the Windows 98/ME system installed and running on your computer. You must also have the 9036 PenMount Serial Interface controller board installed. Contents of the PenMount Windows 98/ME driver folder are listed below:

SETUP.EXE
DMC9000.INF
DMC9000.VXD

If you have an older version of the PenMount Windows 98/ME driver installed in your system, please remove it first. Follow the steps below to install the PenMount Windows 98/Me driver.

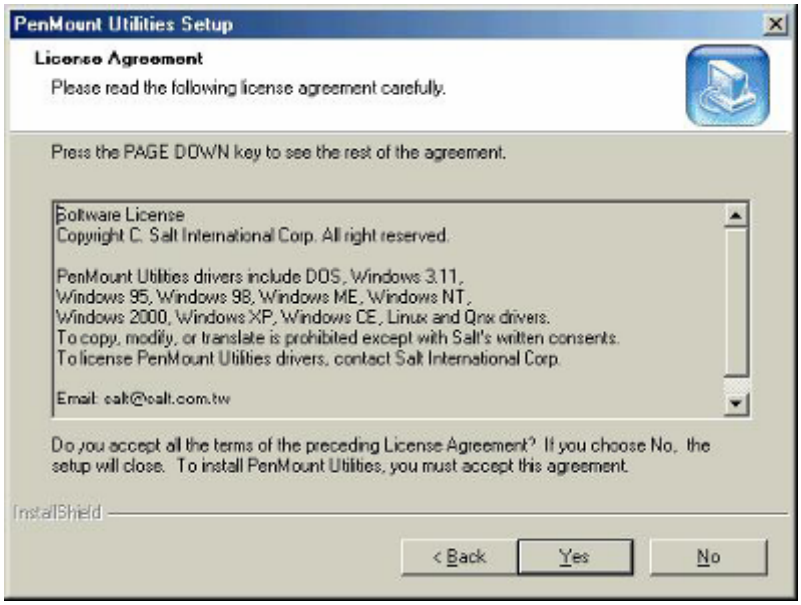
1. When the system first detects the controller board, a screen appears that shows “Unknown Device.” Do not use this hardware wizard. Press Cancel.

2. Install the PenMount Windows 98/ME driver onto your system from the CD-ROM:

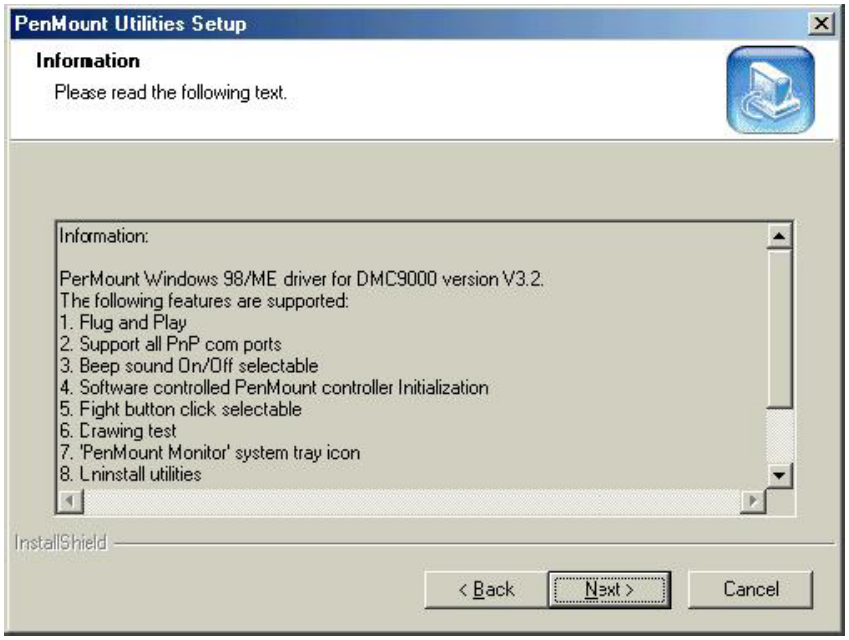


3. A welcome message for the PenMount utilities setup program appears. Select “Next”.

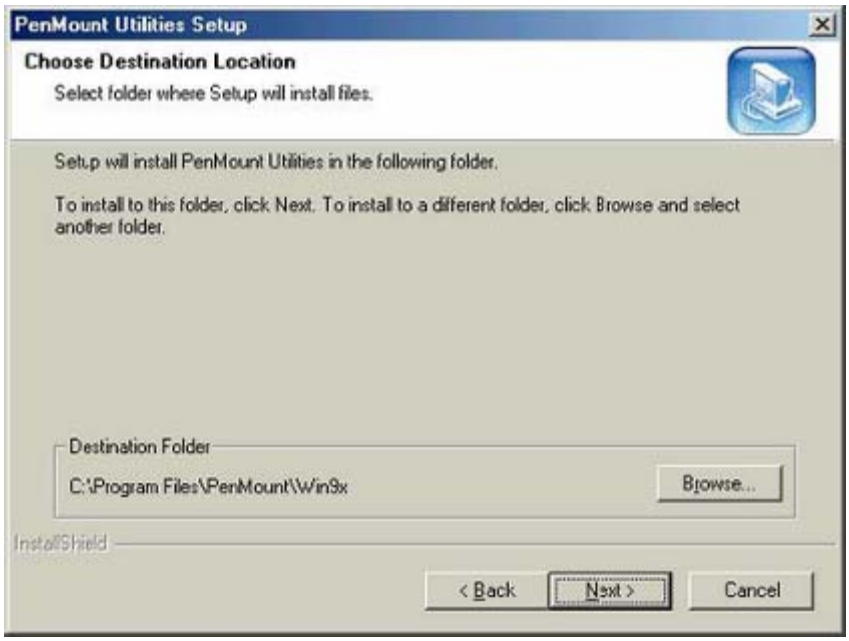
4. The Software License Agreement screen appears. Select "Yes".



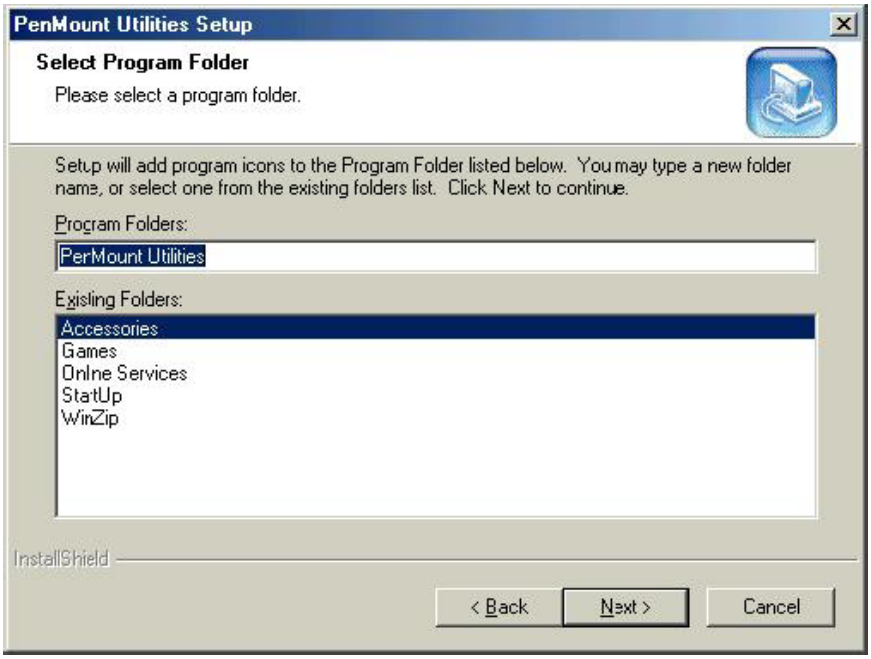
5. The Information screen appears. Select "Next".



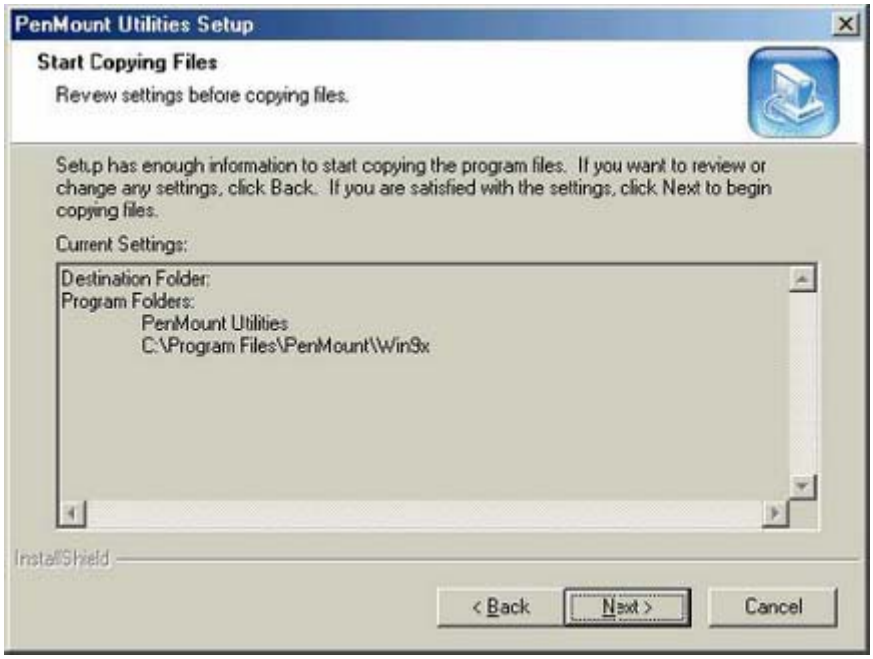
6. The Choose Destination Location screen appears. This installs PenMount Utilities in the folder: C:\Program Files\PenMount\Win9x. Select "Next" or modify the folder name to the one you would like to use.



7. The Select Program Folder screen appears. The default is "PenMount Utilities". Select "Next" or change it.

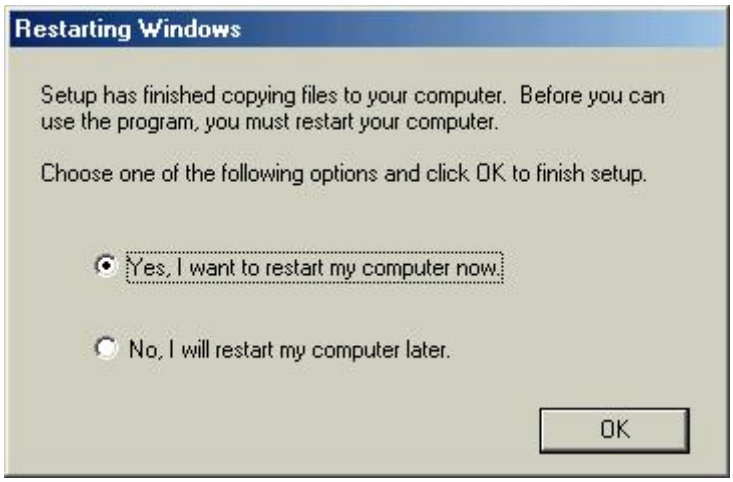


8. The Start Copying Files screen appears. Select "Next" to copy files to the system.



9. The Setup Complete screen appears. Select "Finish".

10. The “Restarting Windows” screen appears, choose “Yes, I want to restart my computer now,” and “OK.”



Configuring the PenMount Windows 98/Me Driver

Upon restarting, the computer automatically finds the new 9000 controller board. The touch screen is connected but not calibrated. Follow the procedures below to carry out calibration.

1. After installation, click the PenMount Monitor icon “PM” in the menu bar.
2. When the PenMount Control Panel appears, click “Calibrate.”

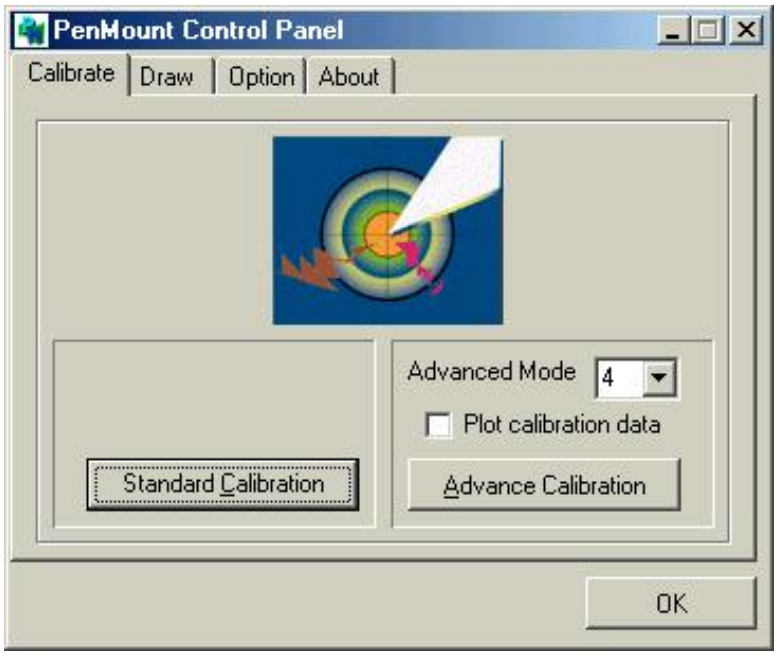
PenMount Control Panel

The functions of the PenMount Control Panel are explained in the following sections.

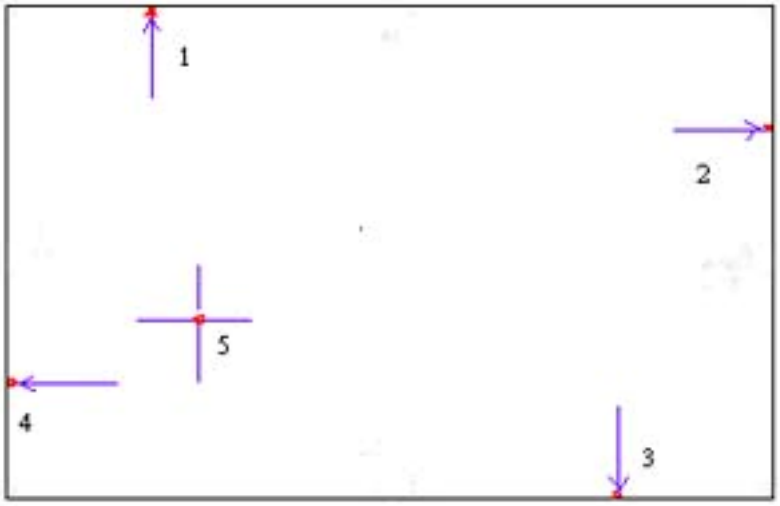
Calibrate

This function offers two ways to calibrate your touch screen. ‘Standard Calibration’ adjusts most touch screens. ‘Advanced Calibration’ adjusts aging touch screens.

Standard Calibration	**Click this button and arrows appear pointing to red squares. Use your finger or stylus to touch the red squares in sequence. After the fifth red point calibration is complete. To skip, press ‘ESC’.**
Advanced Calibration	**Advanced Calibration uses 4, 9, 16 or 25 points to effectively calibrate touch panel linearity of aged touch screens. Click this button and touch the red squares in sequence with a stylus. To skip, press ESC’.**



NOTE: The older the touch screen is, the more Advanced Mode calibration points you need for an accurate calibration. Use a stylus during Advanced Calibration for greater accuracy.


1
2
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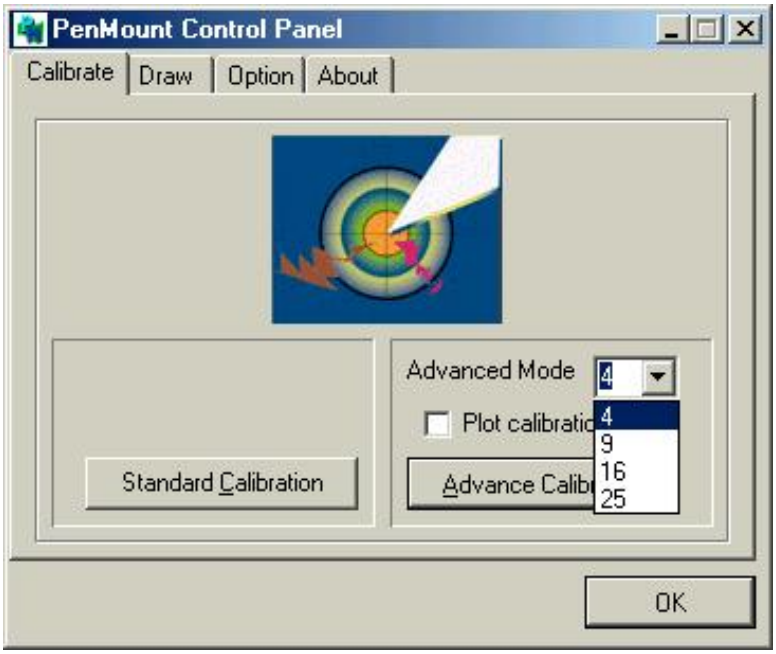
5

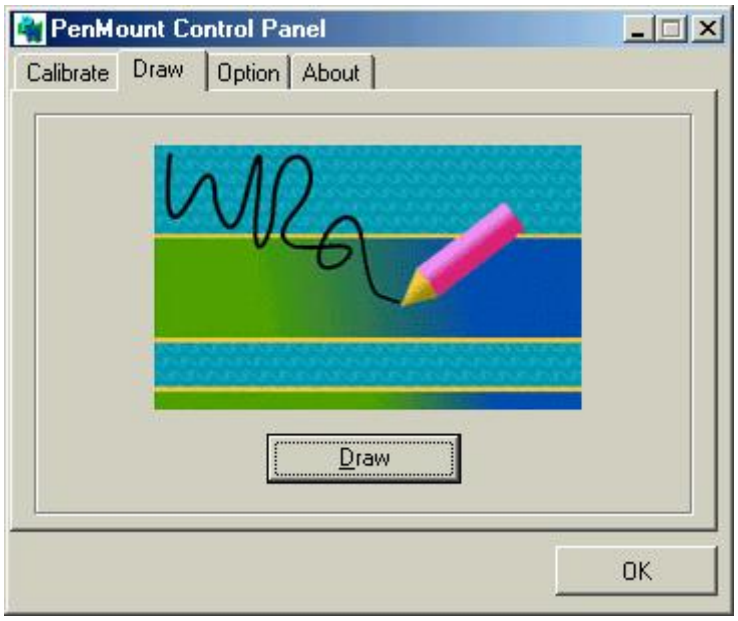

PenMount Control Panel
Calibrate
Draw
Option
About
Advanced Mode
4
Plot calibrati
4
9
16
25
Standard Calibration
Advance Calib
OK


1

Plot Calibration Data	**Check this function and a touch panel linearity comparison graph appears when you have finished Advanced Calibration. The blue lines show linearity before calibration and black lines show linearity after calibration.**

Draw

Tests or demonstrates the PenMount touch screen operation. The display shows touch location. Click **Draw** to start.



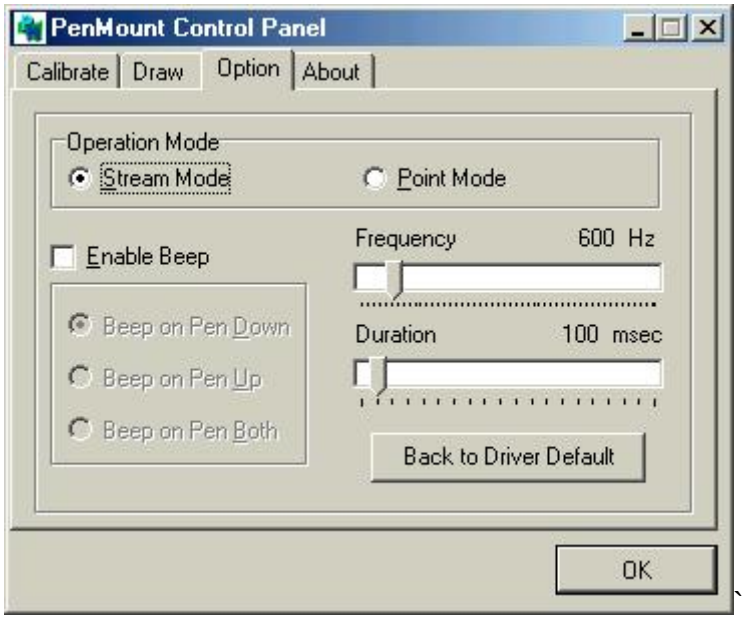
Touch the screen with your finger or a stylus and the drawing screen will register touch activity such as **left**, **right**, **up**, **down**, **pen up**, and **pen down**.

Click Clear Screen to clear the drawing.

Option

This panel function supports two modes—Operation Mode and Beep Sound Mode—which allow configuration for specific touch screen applications, such as point-of-sales (POS) terminals.

Operation Mode	**This mode enables and disables the mouse's ability to drag on-screen icons—useful for configuring POS terminals.** ***Stream Mode* – Select this mode and the mouse functions as normal and allows dragging of icons.** ***Point Mode* – Select this mode and the mouse only provides a click function, and dragging is disabled.**
Beep Sound Mode	***Enable Beep Sound* – turns beep function on and off** ***Beep on Pen Down* – beep occurs when pen comes down** ***Beep on Pen Up* – beep occurs when pen is lifted up** ***Beep on both of Pen Down/Up* – beep occurs on both** ***Beep Frequency* – modifies sound frequency** ***Beep Duration* – modifies sound duration**



About

This panel displays information about the PenMount controller and this driver version.

PenMount Monitor Menu Icon

The PenMount monitor icon (PM) appears in the menu bar of Windows 98/ME system when you turn on the PenMount Monitor in the PenMount Utilities.

The PenMount Monitor has the following functions:

Right Click Button	**When you select this function, a mouse icon appears in the right-bottom of the screen. Click this icon to switch between Right and Left**  **Button functions.**
Beep Sound	**Turns beep on or off.**
Enable PNP	**Turns PNP on or off. When this is unchecked, PNP is off. The RS-232 transfer signal is continuous when the cable is unplugged and plugged into the serial port.**
Exit	**Exits the PenMount Monitor function.**

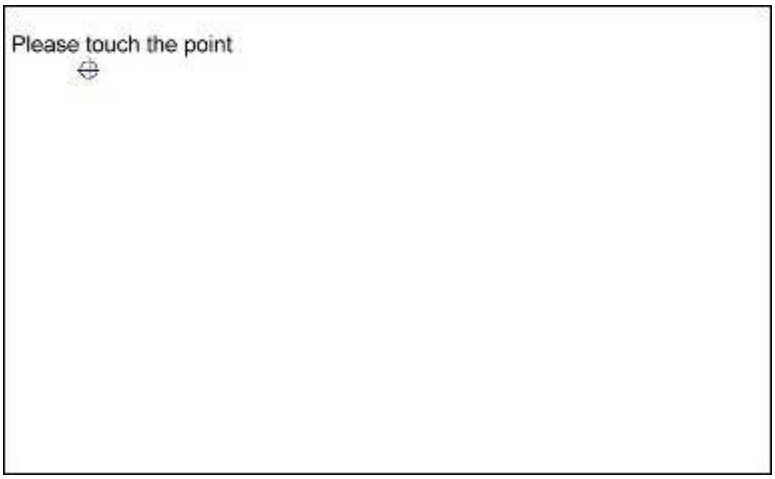
PenMount Rotating Functions

The PenMount driver for Windows 98/ME supports several display rotating software packages. The PenMount drivers for Windows 95, Windows 98/ME, Windows 2000/XP, as well as Windows 98 USB and Windows ME/2000/XP support display rotating software packages such as:

- Portrait's Pivot Screen Rotation Software
- ATI Display Driver Rotate Function
- nVidia Display Driver Rotate Function
- SMI Display Driver Rotate Function
- Intel 845G/GE Display Driver Rotate Function

Configuring the Rotation Function

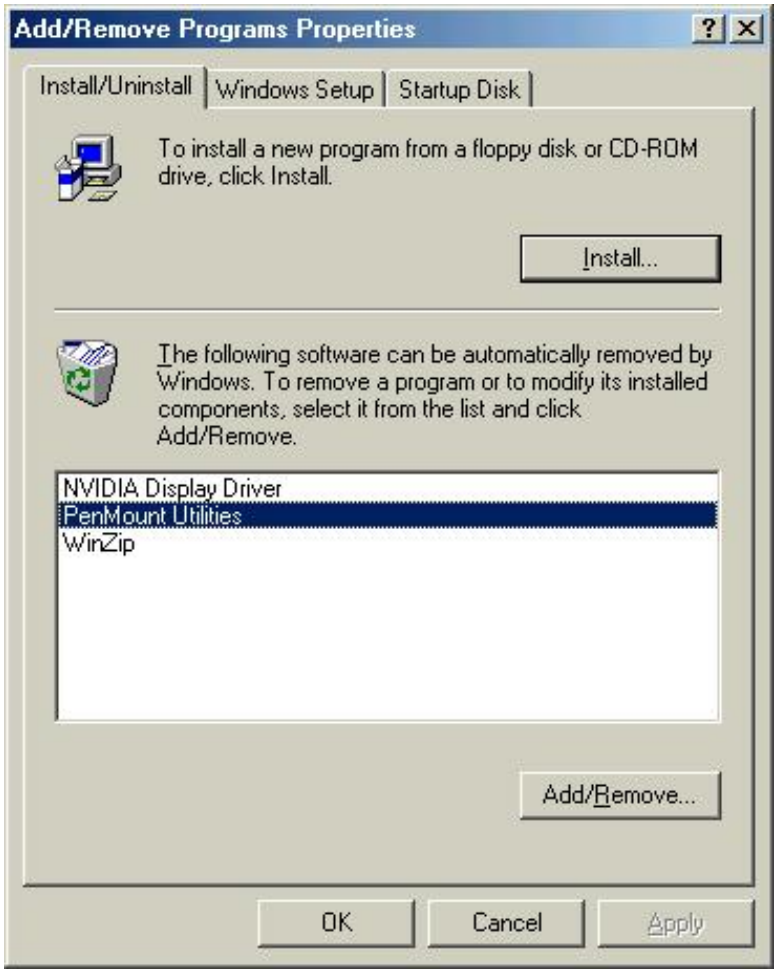
1. Install the rotation software package.
2. Choose the rotating function (0°, 90°, 180°, 270°) in the 3rd party software. The calibration screen appears automatically. Touch this point and rotation is mapped.



NOTE: The Rotating function is disabled if you use Monitor Mapping

3.3 Uninstall the PenMount Windows 98/ME Driver

1. Exit the PenMount monitor (PM) in the menu bar.



2. From “PenMount Utilities” in “Programs”, select the “Uninstall” utility
3. This message appears: “Are you sure you want to completely remove ‘PenMount Utilities’ and all its components?”
4. Select “Yes” to remove the PenMount Windows 98/ME driver.
5. Reboot system and the PenMount Windows 98/ME driver is removed from system.

3.4 Windows 2000/XP Driver Installation for 9036 Control Board

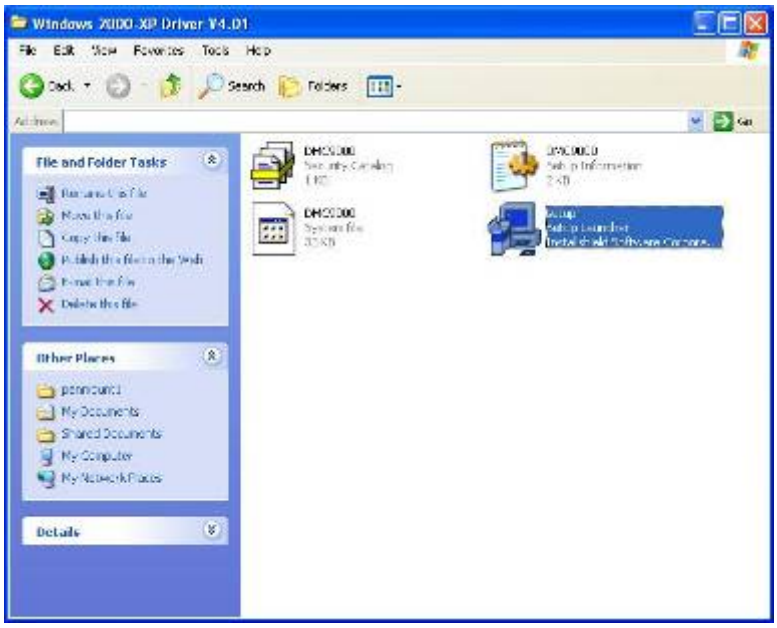
Before installing the Windows 2000/XP driver software, you must have the Windows 2000/XP system installed and running on your computer. You must also have the 9036 PenMount Serial Interface controller board installed. Contents of the PenMount Windows 2000/XP driver folder are listed below:

DMC9000.inf
DMC9000.sys
DMC9000.cat
SETUP.EXE

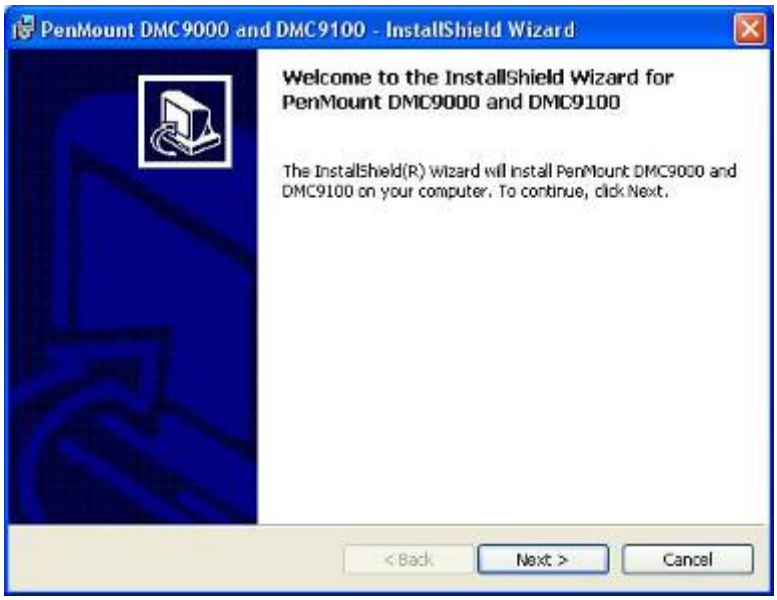
If you have an older version of the PenMount Windows 2000/XP driver installed in your system, please remove it first. Follow the steps below to install the PenMount Windows 2000/XP driver.

1. When the system first detects the controller board, a screen appears that shows “Unknown Device”. Do not use this hardware wizard. Press Cancel.

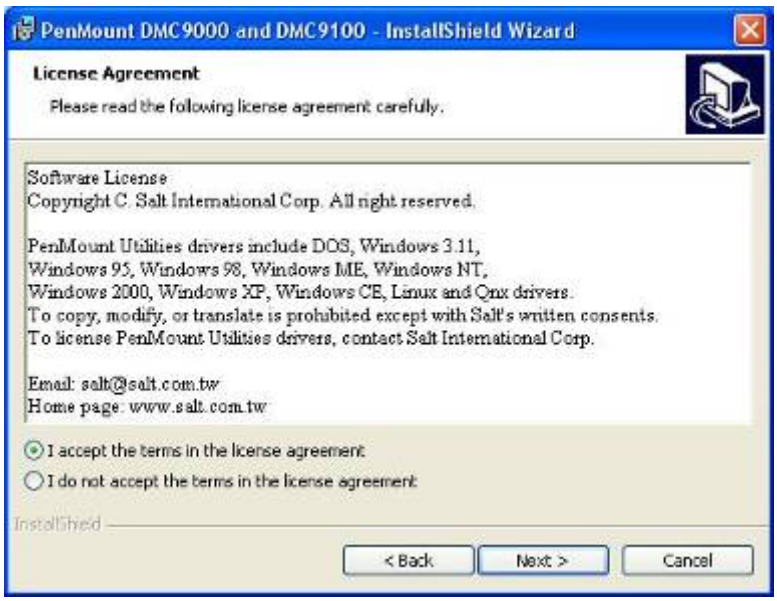
2. Insert the PenMount Driver CD-ROM. Go to the Windows 2000-XP Driver folder. Click **setup.exe**.



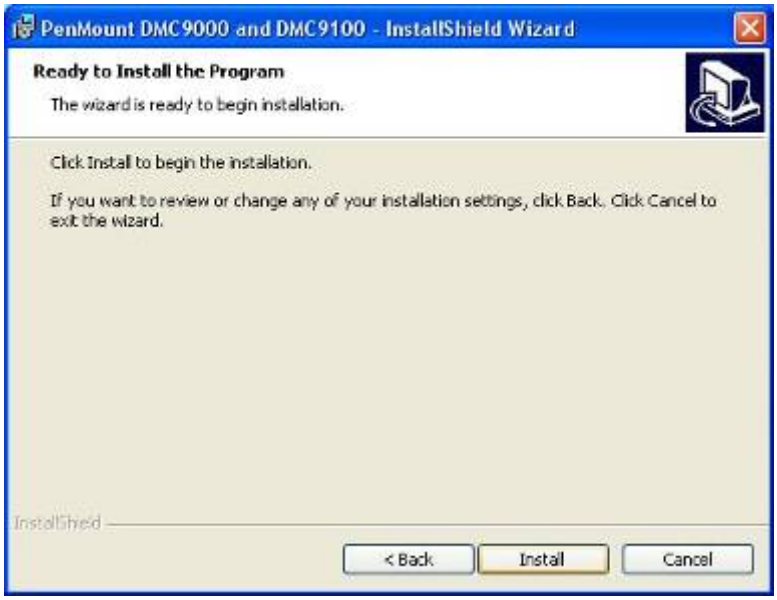
3. The screen displays the installation wizard for the PenMount software. Click “Next”.



3. A License Agreement appears. Click “I accept…” and “Next”.

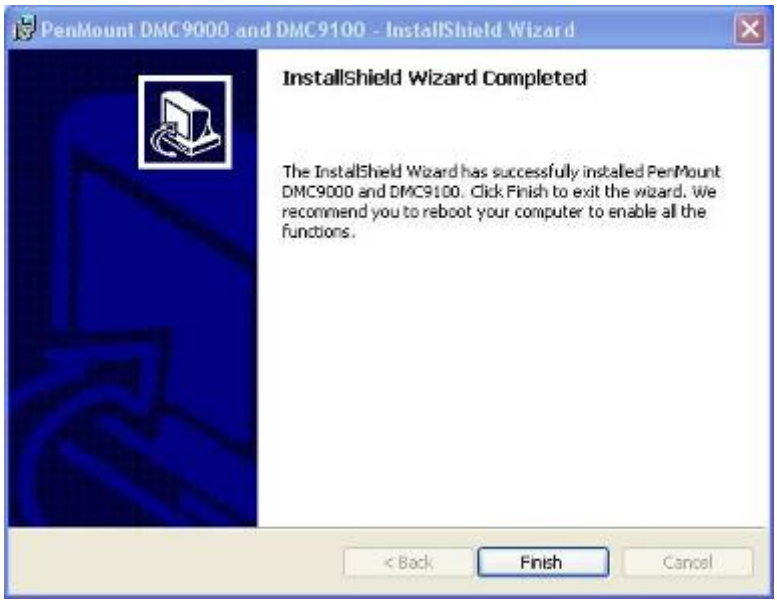


4. The “Ready to Install the Program” screen appears. Select “Install”.



5. The next screen is “Hardware Installation”. Select “Continue Anyway”.

6. The “InstallShield Wizard Completed” appears. Click “Finish”.



3.5 Configuring the PenMount Windows 2000/XP Driver

Upon rebooting, the computer automatically finds the new 9036 controller board. The touch screen is connected but not calibrated. Follow the procedures below to carry out calibration.

1. After installation, click the PenMount Monitor icon “PM” in the menu bar.
2. When the PenMount Control Panel appears, click “Calibrate”.

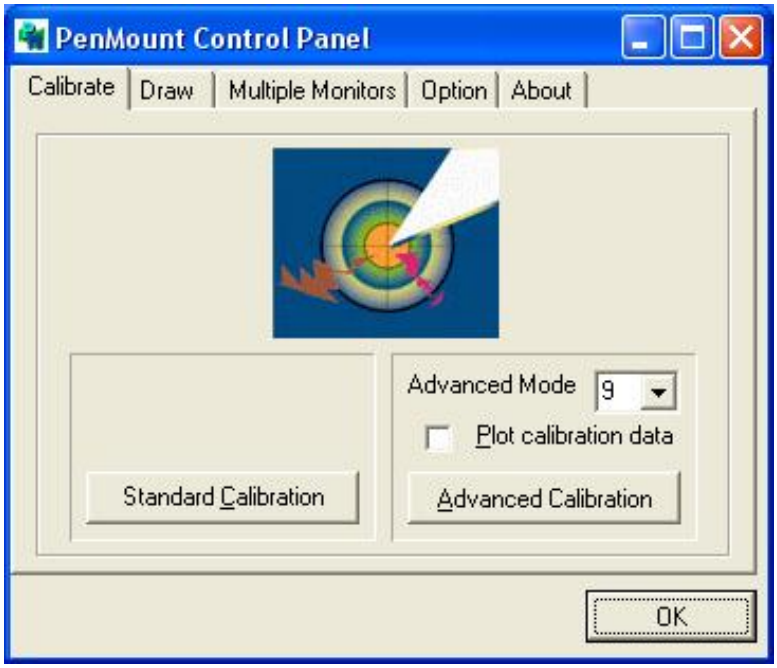
PenMount Control Panel

The functions of the PenMount Control Panel are **Calibrate**, **Draw**, **Multiple Monitors**, **Option**, and **About**, which are explained in the following sections.

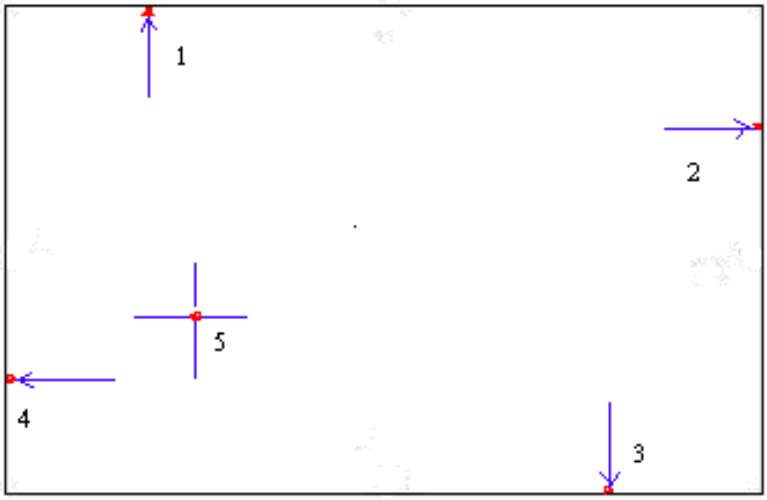
Calibrate

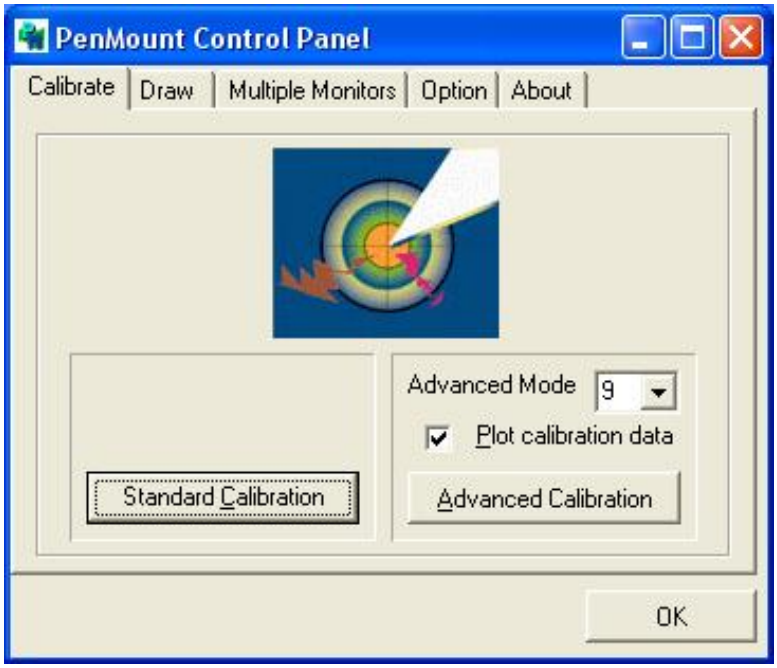
This function offers two ways to calibrate your touch screen. “Standard Calibration” adjusts most touch screens. “Advanced Calibration” adjusts aging touch screens.

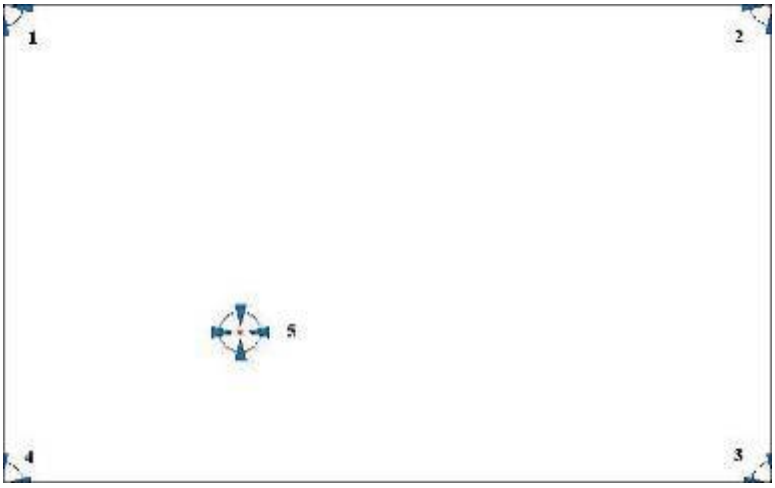
Standard Calibration	**Click this button and arrows appear pointing to red squares. Use your finger or stylus to touch the red squares in sequence. After the fifth red point calibration is complete. To skip, press ‘ESC’.**
Advanced Calibration	**Advanced Calibration uses 4, 9, 16 or 25 points to effectively calibrate touch panel linearity of aged touch screens. Click this button and touch the red squares in sequence with a stylus. To skip, press ‘ESC’.**



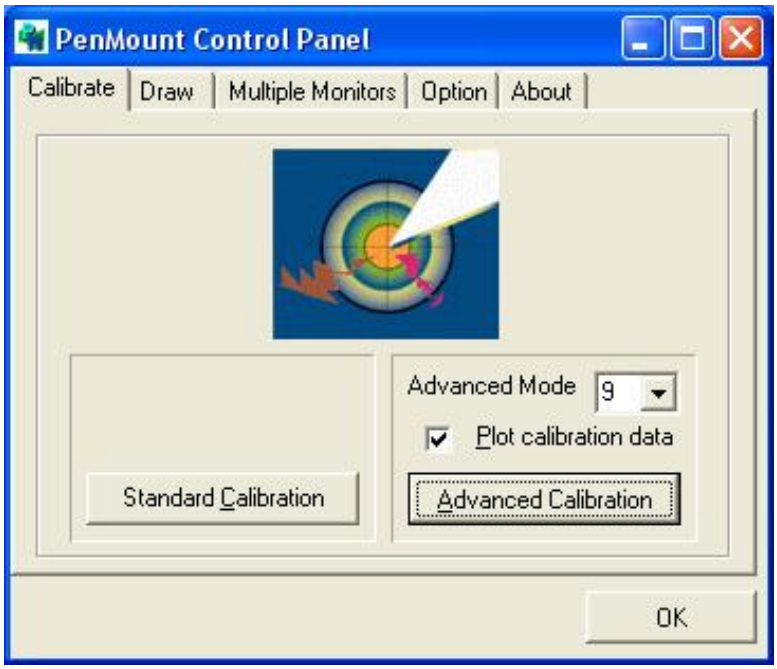
NOTE: The older the touch screen is, the more Advanced Mode calibration points you need for an accurate calibration. Use a stylus during Advanced Calibration for greater accuracy.





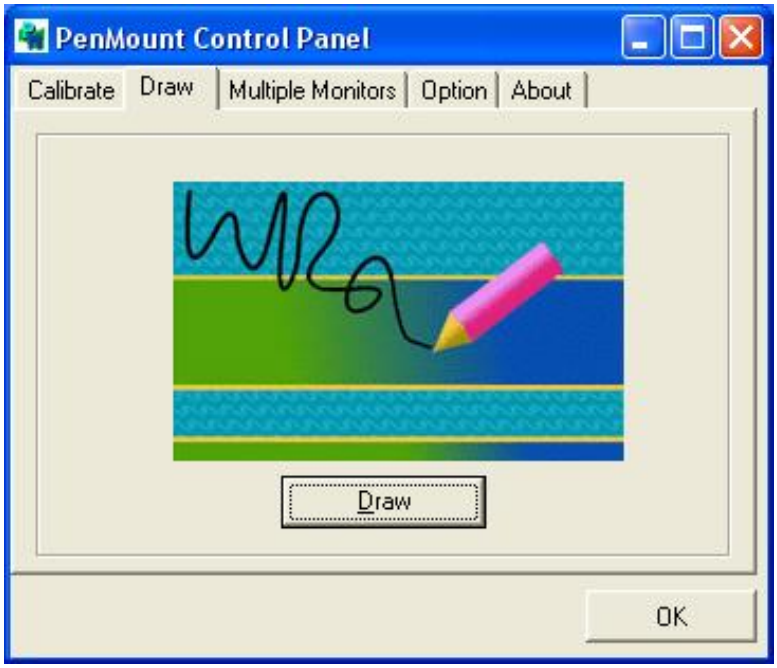


Plot Calibration Data **Check this function and a touch panel linearity comparison graph appears when you have finished Advanced Calibration. The blue lines show linearity before calibration and black lines show linearity after calibration.**



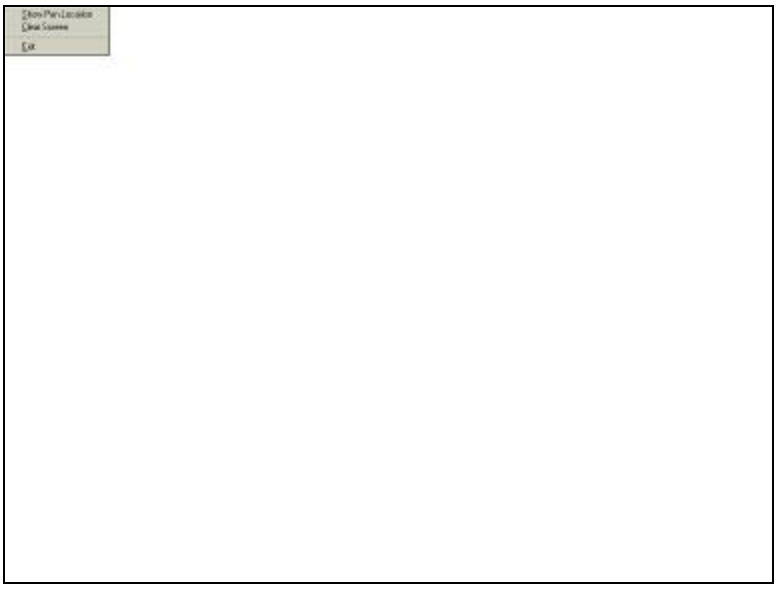
Draw

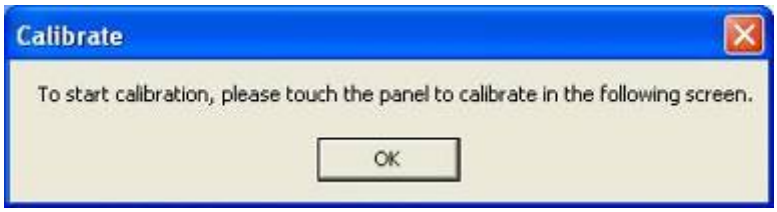
Tests or demonstrates the PenMount touch screen operation. The display shows touch location. Click **Draw** to start. Touch the screen with your finger or a stylus and the drawing screen will register touch activity such as **left**, **right**, **up**, **down**, **pen up**, and **pen down**.



Touch the screen with your finger or a stylus and the drawing screen will register touch activity such as **left**, **right**, **up**, **down**, **pen up**, and **pen down**.

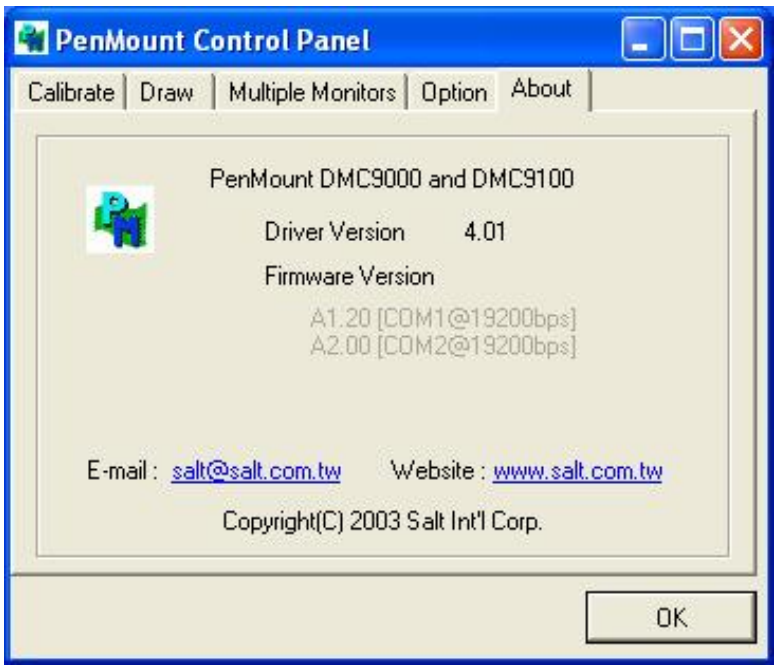
Click Clear Screen to clear the drawing.





About

This panel displays information about the PenMount controller and this driver version.



PenMount Monitor Menu Icon

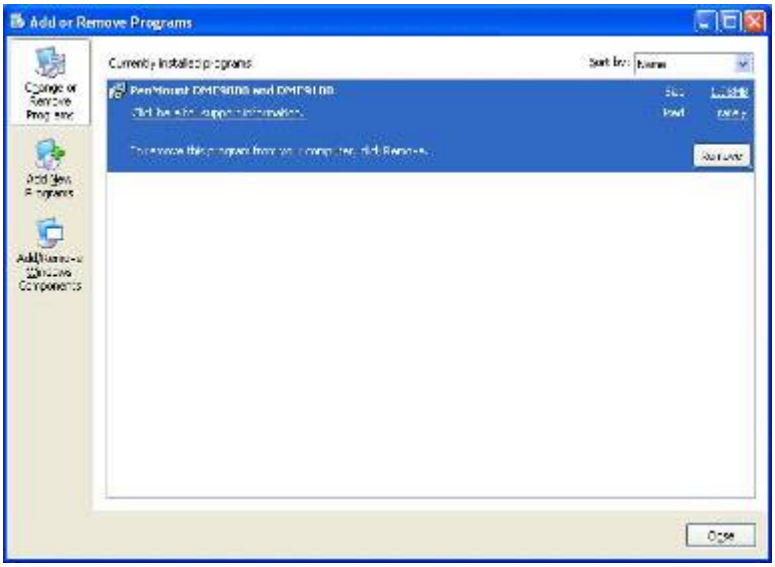
The PenMount monitor icon (PM) appears in the menu bar of Windows 2000/XP system when you turn on the PenMount Monitor in the PenMount Utilities.

The PenMount Monitor has the following functions:

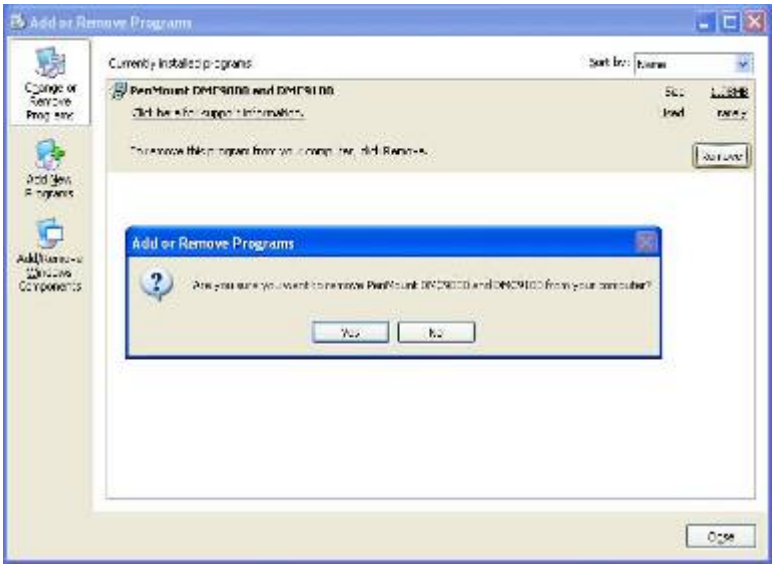
Beep	**Turns beep on or off.**
Right Button	**When you select this function, a mouse icon appears in the right-bottom of the screen. Click this icon to switch between Right and Left**  **Button functions.**
Pen Stabilizer	**Check this function to reduce cursor vibration for relatively unstable touch screens, or where there may be excess vibration. Normally this function is not checked.**
Exit	**Exits the PenMount Monitor function.**

3.6 Uninstall the PenMount Windows 2000/XP Driver

1. Exit the PenMount monitor (PM) in the menu bar.
2. Go to **Settings**, then **Control Panel**, and then click **Add/Remove program**. Select **PenMount DMC9000** and click the **Add/Remove** button.



3. Select **PenMount DMC9000 and DMC9100**. Click the **Remove** button.



4. Select “Yes” and “Close” to remove the PenMount Windows 2000/XP driver, and reboot the system.

3.7 Software Function Description

Description for each of the software functions shown in the table above follows:

Standard Calibration

The Standard Calibration function lets you match the touch screen to your display so that the point you touch is accurately tracked on screen. Standard calibration only requires four points for calibration and one point for confirmation. Under normal circumstances, Standard Calibration is all you need to perform an accurate calibration.

Advanced Calibration

The Advanced Calibration function improves the accuracy of calibration by using more involved engineering calculations. Use this function only if you have tried the Standard Calibration and there is still a discrepancy in the way the touch screen maps to the display. You can choose 4, 9, 16 or 25 points to calibrate, though we suggest that you first try 9 points, if it is still not tracking well then try 16 or 25 points. The more points you use for calibration, the greater the accuracy. Errors in calibration may occur due to viewing angle, or individual skill, and there may be little difference in using 16 or 25 points. Note that a stylus is recommended for the most accurate results.

Multiple Monitors

Until now most touch screen systems only support one monitor, and users of multiple monitors have not been able to use touch screen systems. This situation has inspired PenMount to design and develop Multiple Monitors support using the PenMount 9036 control board and Windows 2000/XP driver. Our advanced design supports from 2 to 6 monitors that can be split horizontally or vertically.

Requirements

Before using the Multiple Monitor function, you need the following:

1. A display card that supports multiple monitors such as the Matrox, nVidia, ATI, etc. (Two or more display cards supported by Windows are also OK.)
2. Two or more touch screens
3. Two or more serial ports
4. Two or more PenMount 9000 control boards such as the 9036, 9026, 9084, or 90A4
5. The PenMount 9000 Windows 2000/XP v4.01 or greater software driver

Before using Multiple Monitors you must have two or more monitors that are in extension mode. For display cards that support multiple monitors, we suggest you consider Matrox, nVidia, or ATI cards and inquire about operation and usability issues.

Note: Before you can use multiple monitors, you need to map each monitor.

Stream/Point Mode

Stream and point modes control the touch and drag function of the touch screen. The point mode only allows “touch” interaction with the screen and does not allow the user to drag objects. The point mode is useful for maintaining the location of screen icons such on POS terminals. The stream mode allows a user to touch and drag icons and other items around on the screen, similar to using a mouse.

Drawing Mode

Drawing mode is a utility that lets the user draw on the screen using a finger or stylus. This allows the user to test the touch screen and touch controller to see if it is operational or is mapped correctly. The drawing mode can display either the matrix address of points touched or just show lines drawn. One of the PenMount driver’s strengths is a special mathematical algorithm that minimizes the occurrence of noise and smooths the drawing of lines.

Beep Sound

All of PenMount’s drivers support the beep sound function; however, some PC systems may only offer a fixed buzzer sound.

Beep Sound Adjustable

Software drivers for Windows systems let the user adjust the frequency and length of the beep sound. The drivers let the user adjust the desired touch screen sound, as well as turn the sound off.

Wake Up Function

The Wake Up function lets the user touch the screen and wake the system up from ‘suspend’ mode.

Point Calibration Data

The Plot Calibration Data function displays the touch screen linearity map, which is available if the PenMount driver provides an Advance Calibration function when touch screens age their touch linearity declines. This non-linearity is apparent when the touched point on the touch screen is not the same as the point on the display. The plot

calibration data function shows the linearity status of the touch screen. This is only a support function for the user. The exact linearity of a touch screen requires a linearity test machine.

Right Button

The Right Button function simulates the right button function of a mouse. Click the right button and the user can only touch the screen once and the driver changes the touch definition to the left button.

Hide Cursor

The Hide Cursor function keeps the cursor arrow and other cursor symbols from appearing when using the touch screen. The cursor appears when the user turns this function off.

Cursor Offset

The Cursor Offset function lets the user adjust the position of the touch point to a desired location away from the real touch point.

Double-Click Area and Speed

The Double-Click Area and Speed function lets the user adjust the double-click area and speed to their personal preference.

About

This option shows the exact version of the drivers and controller firmware. Updated drivers are available for download on the PenMount website.

Appendix

Panel Mounting

The ADP-1190 display monitor is designed to be panel- or wall-mounted as shown in Figure A and Figure B. Just carefully place the unit through the hole and tighten the given 8 screws from the rear to secure the mounting.

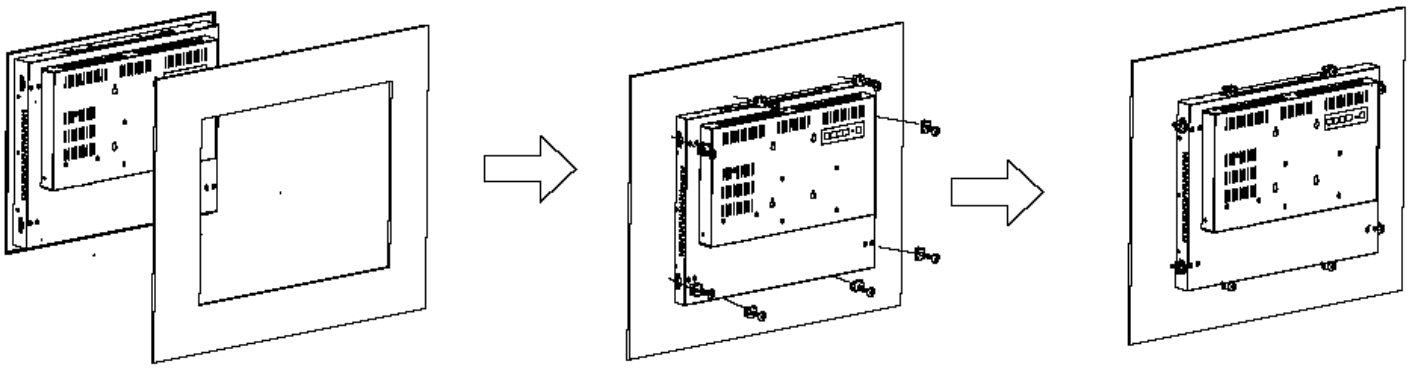


Figure A: Panelmounting of the ADP1190