User Manual

MTM084-TST/TUT MTM121-XST/XUT MTM17M-TST/TUT

Industrial LCD Monitor User Guide

Contents

1. Introduction

The MTM series touch monitor is a fast response, high brightness, high saturation and well contrast, which are setting in the industrial machine. They are high-end LCD monitors as well as value-add features for touch. There are 3 various panel sizes include 8.4", 12.1", 17" TFT LCD, with different form factors include: 12.1" Aluminum Front Panel, 8.4" Plastic Housing, 17" Open Frame, Panel Mount, and Touch Screen, Digital/Analog RGB/Video AV signal input jacks and DC24 power adapter. This combination ensures an industrial monitor built specifically for machine maker to make their own equipments with their unique architecture.

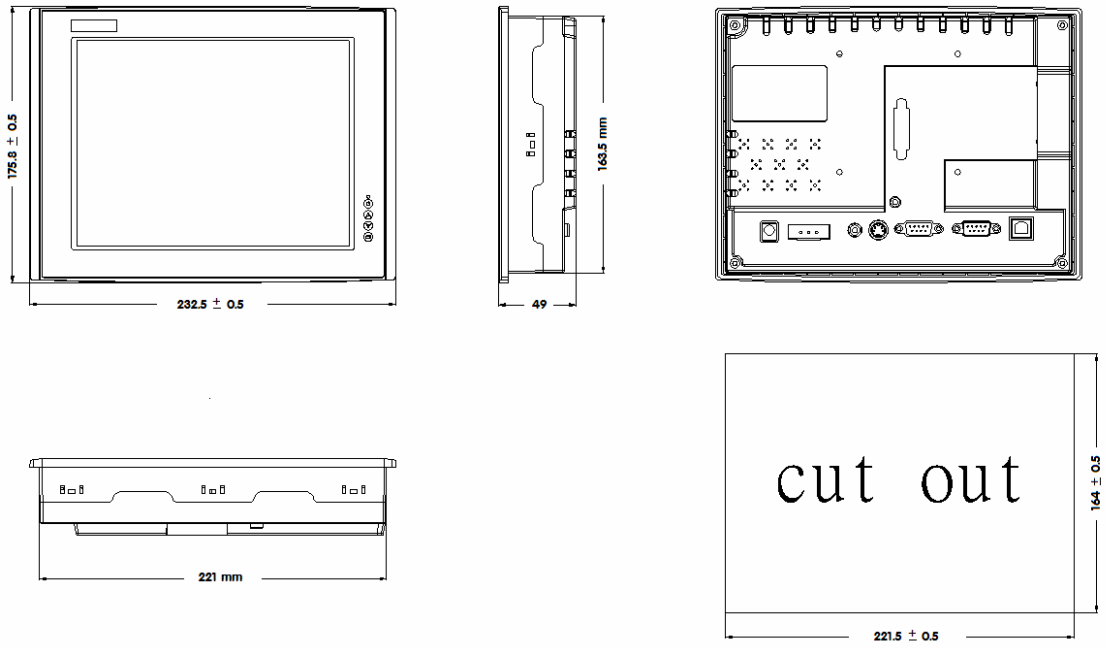
2. Product Features

2.1 Specifications

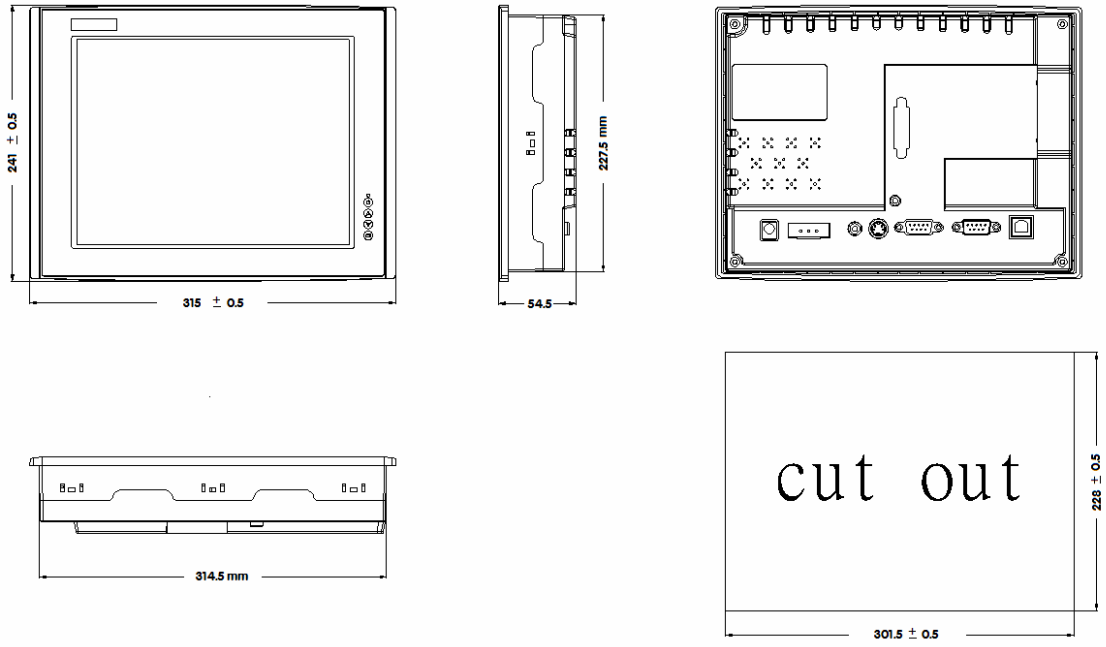
Model Name		MTM084-TST/TUT	MTM121-XST/XUT	MTM17M-TST/TUT
Viewable Size		8.4"	12.1"	17.0"
Display Type		TFT		
Resolution		800 × 600 Pixels	1024 × 768 Pixels	1280x1024 Pixels
Display Color		262K(18bits)	262K(18bits)	16.7M (24bits)
Brightness		350 cd/m²	400 cd/m²	300 cd/m²
Contrast Ratio		350 : 1	500 : 1	450 : 1
Pixel Pitch		0.213 mm	0.24 mm	0.264 mm
Viewing Angle		60°(H) / 40°(V)	45°(H) / 35°(V)	80°(H) / 80°(V)
Display Area (mm)		170.4(H)×127.8(V)	245.76(H)×184.32(V)	337.92(H)×270.34(V)
Response Time		20 ms	10 ms	11 ms
Power Source		24V DC		
Power Consumption		8W	12W	18W
Touch Panel (Optional)		MTM084-TST (RS232 Interface) MTM084-TUT (USB Interface)		
Input Interface		DVI / D-Sub VGA / S-Video / AV(CVBS)		
Backlight		2 CCFL	2 CCFL	4 CCFL
Storage temperature		-20°~ 60°		
Environmental	Operating temperature	0°~50°	0°~50°	0°~50°
	Relative humidity	90%	90%	90%
	Shock (Operation)	10 to 25Hz (X, Y, Z direction 1G, 30 minutes)		
	EMI	Complies with FCC Part 15 Class B		
	CE	Complies with EN50081-2 and EN50082-2 standards		
	Front Panel	Meets NEMA4/IP65		Open Fram
Certifications		CE、FCC		
Outlet Dimensions[W x H x D]mm		232.5 x 176.x 49	315 x 241x 54.5	TBD
Cutout Dimensions[W x H x D]mm		221.5 x 164.5	302 x 228	TBD
Net Weight[K.G]		0.9KG	2.2KG	TBD

2.2 MTM Series dimension is illustrated below:

MTM084 (***Support VESA Arm 75 x 75 mm hole)



MTM121

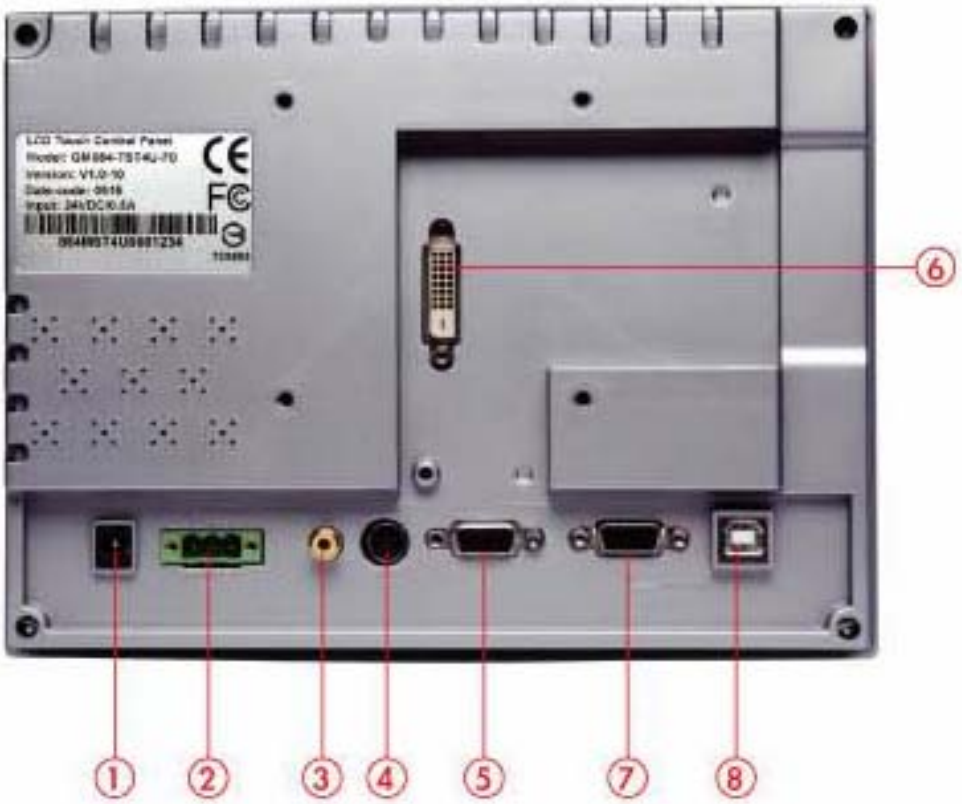


2.3 Accessories

- MTM monitor x1
- 24V DC Power Terminal x1
- 15 pin D-sub video cable x1
- Touch screen cable with RS232 serial port x1 or USB cable x 1 (Optional)
- Users manual x1
- Touch screen driver software CD x1

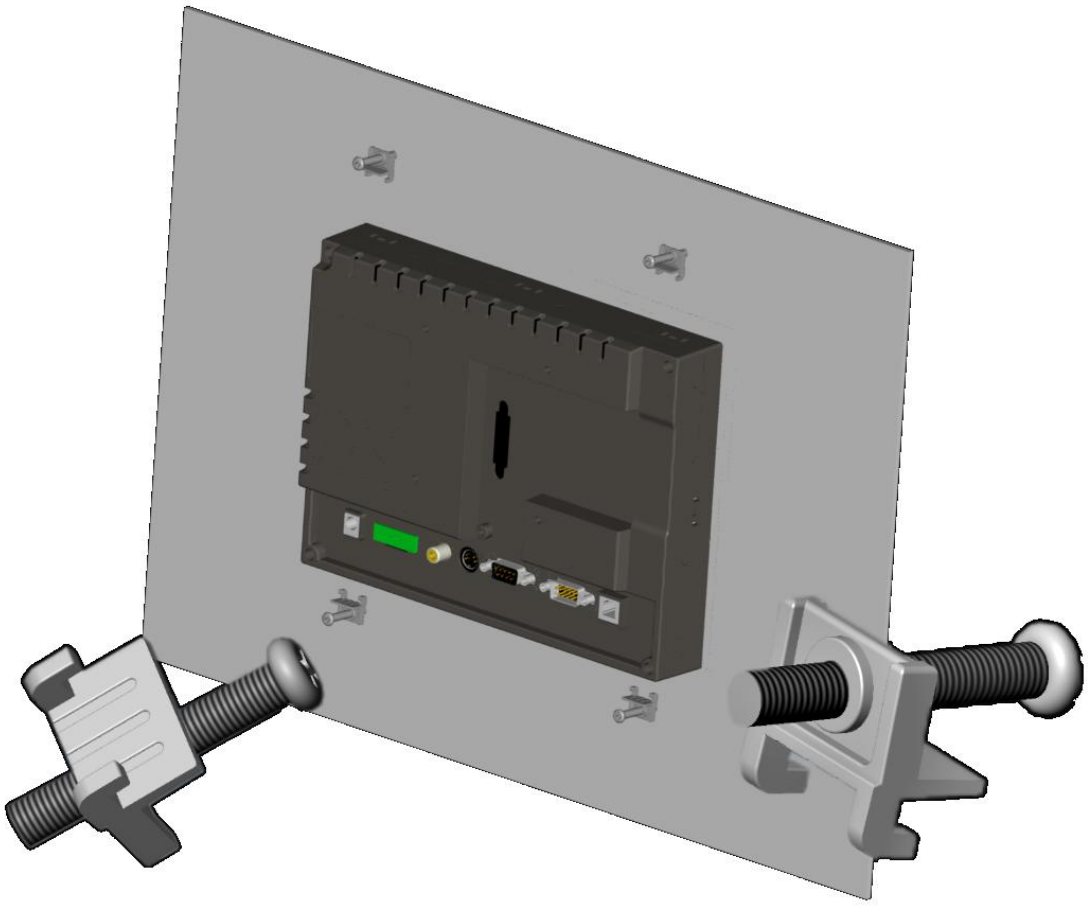
	
MTM monitor	24V DC Power Terminal
	
15 pin D-sub video cable x1	Touch screen cable (USB or D-sub cable)
	
Users manual (CD-POM)	Touch screen driver software CD

3. Hardware Installation



① DC24V phone jet connector
② DC24V power input terminal
③ AV Connector
④ S-Video
⑤ D-Sub analog VGA
⑥ DVI port
⑦ Touch panel RS232 interface
⑧ Touch panel USB interface

3.1 Panel Mount



3.2 Arm Mount (***For MTM084 use only)

4. Touch Panel Driver Installation

4.1 RS232 Touch Panel Driver installation

Windows 2000/XP Driver Installation for touch panel RS232 Interface

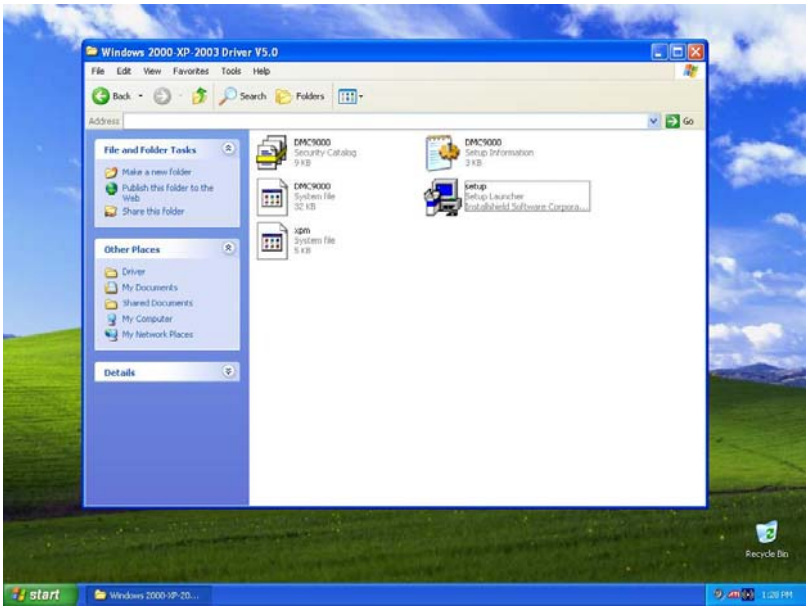
Before installing the driver software, you must have the Windows 2000/XP system installed and running on your computer. You must also have one of the following Serial Interface installed : 90A4, 9026B, 9036 or 9084. Contents of the driver folder are listed below.

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

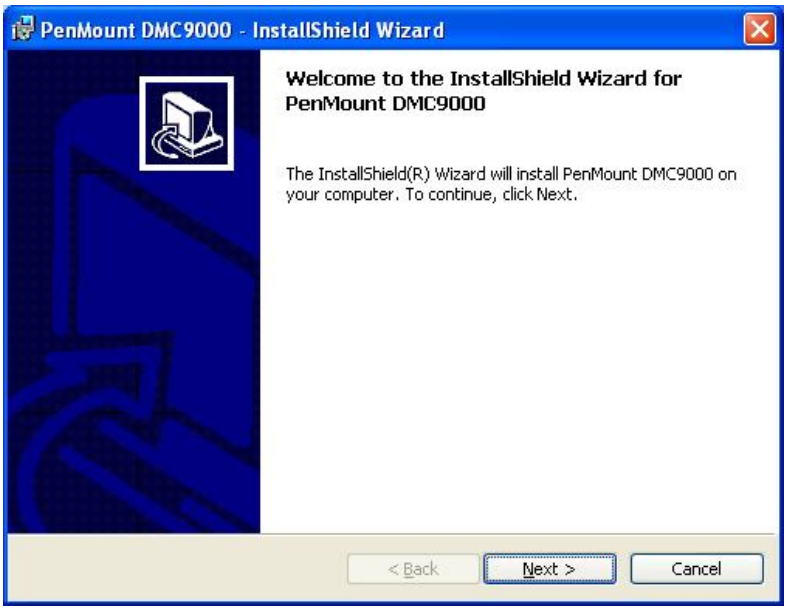
Follow the steps below to install the driver.

1. When the system first detects the touch panel (RS232 Interface), a screen appears that shows “Unknown Device.” Do not use this hardware wizard. Press Cancel.

2. Insert the Driver CD-ROM. Go to the Driver folder. Click “**setup.exe**”.

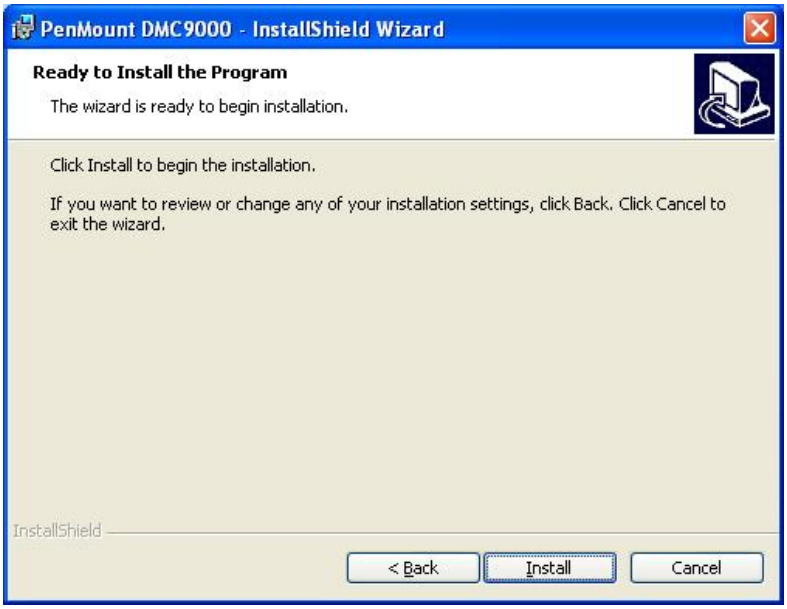


3. The screen displays the installation wizard. Click “**Next**”.

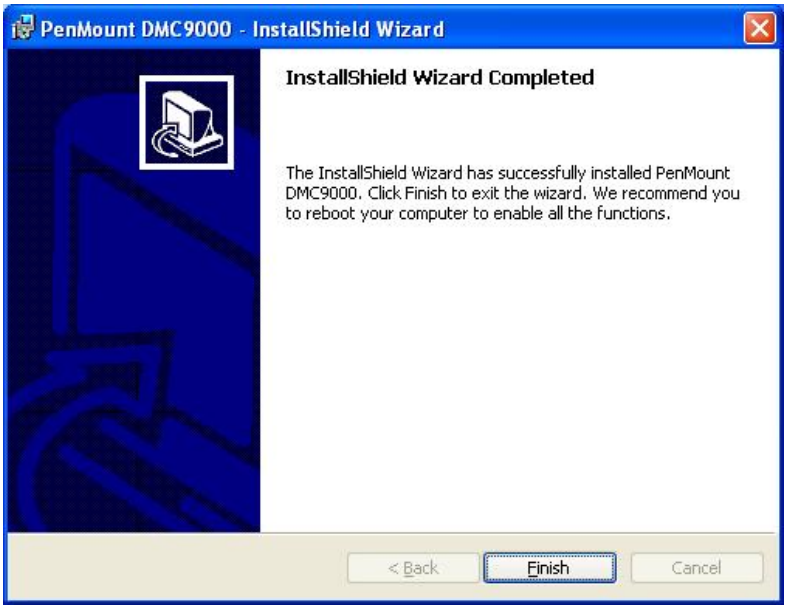


4. A License Agreement appears. Click **“I accept…**” and “**Next**”

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



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



Configuring the RS232 Driver

Upon rebooting, the computer automatically finds the RS232 interface. 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**.”

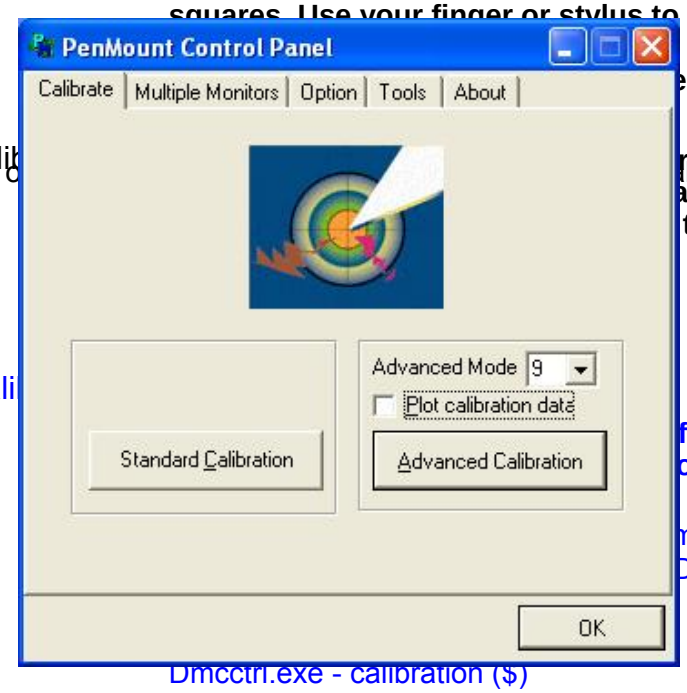
PenMount Control Panel

The functions of the PenMount Control Panel are **Calibrate**, **Multiple Monitors**, **Option**, **Tools** 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 red point ess ‘ESC’.**



Advanced Calib The c ibration points **r 25 points to arity of aged touch the red squares in**

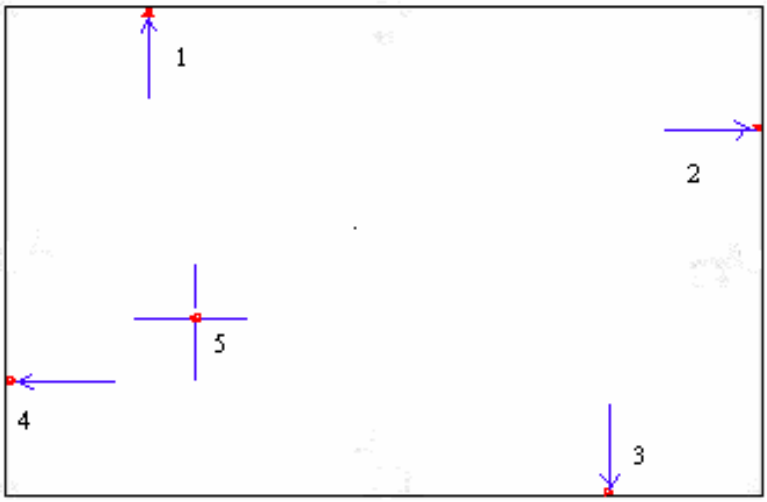
NOTE: yo

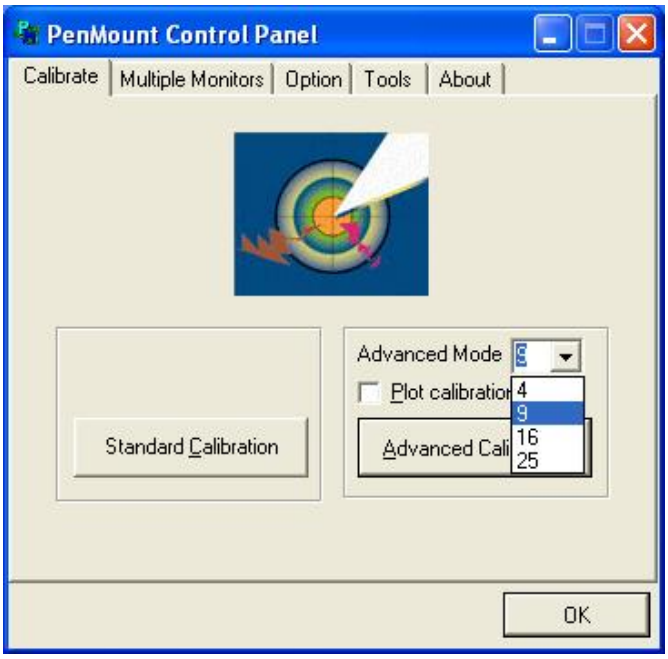
Command Cali **function, this can o calibrate**

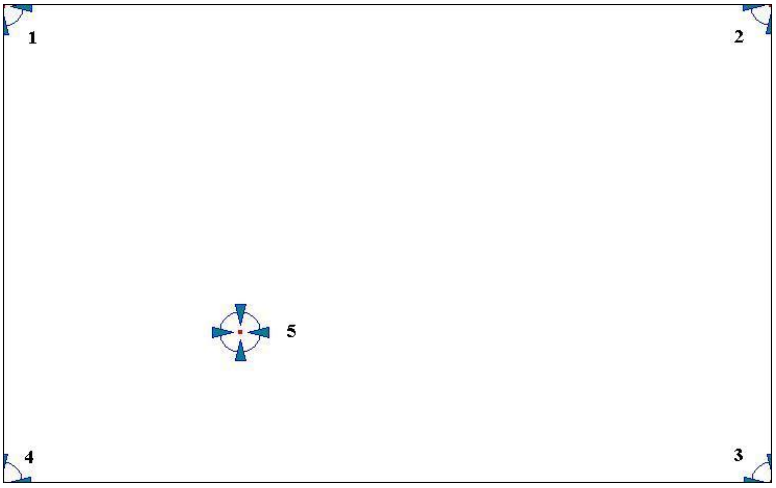
mand prompt
Dmcctrl.exe

Dmcctrl.exe - calibration ($)

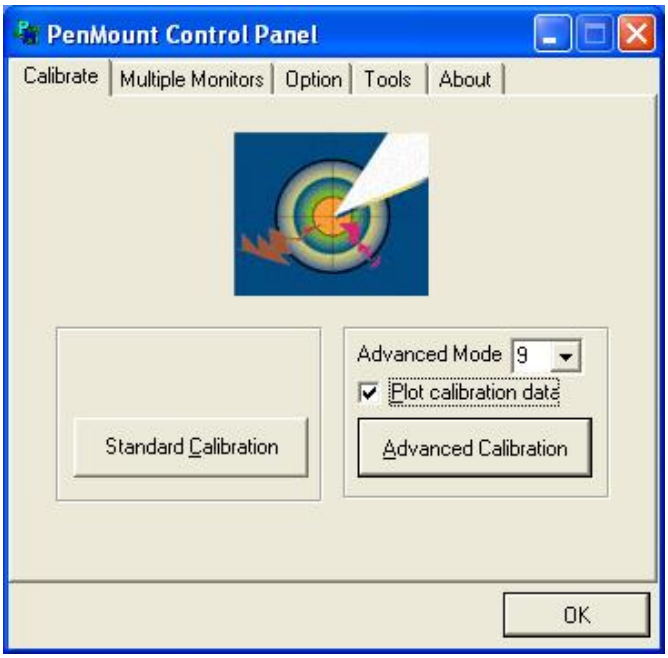
0= Standard Calibration
4=Advanced Calibration 4
9=Advanced Calibration 9
16=Advanced Calibration 16
25=Advanced Calibration 25


1
2
3
4
5

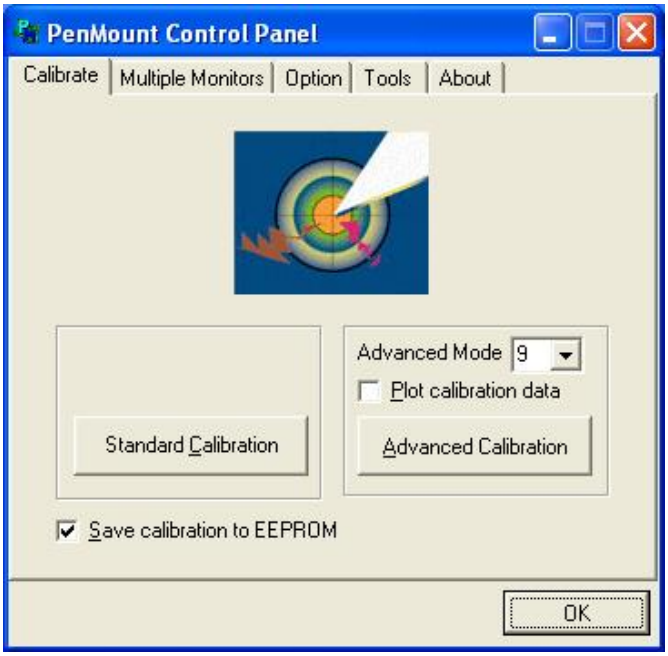

PenMount Control Panel
Calibrate
Multiple Monitors
Option
Tools
About
Standard Calibration
Advanced Mode
Plot calibration
Advanced Cali
4
9
16
25
OK


1
2
3
4
5

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.**



Save calibration to EEPROM **(Support firmware version C2.2 or later)**	**It is save calibration data into control board function, if was select this function that colluded. But need control board firmware version support.**


PenMount Control Panel
Calibrate
Multiple Monitors
Option
Tools
About
Advanced Mode
9
Plot calibration data
Standard Calibration
Advanced Calibration
Save calibration to EEPROM
OK

Multiple Monitors

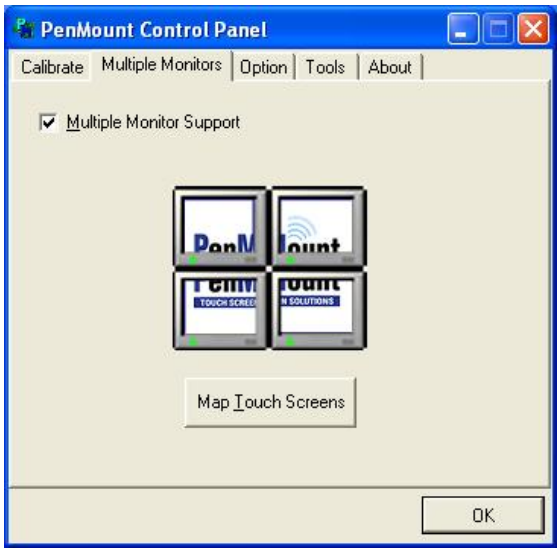
Multiple Monitors supports from two to six touch screen displays for one system. The drivers support Multiple Monitors. This function supports from two to six touch screen displays for one system. Each monitor requires its own touch screen, either installed inside the display or in a central unit. The D-Sub connector must be connected to the computer COM ports via the RS-232 interface. Driver installation procedures are the same as for a single monitor. Multiple Monitors supports the following modes:

Windows Extend Monitor Function
Matrox DualHead Multi-Screen Function
nVidia nView Function

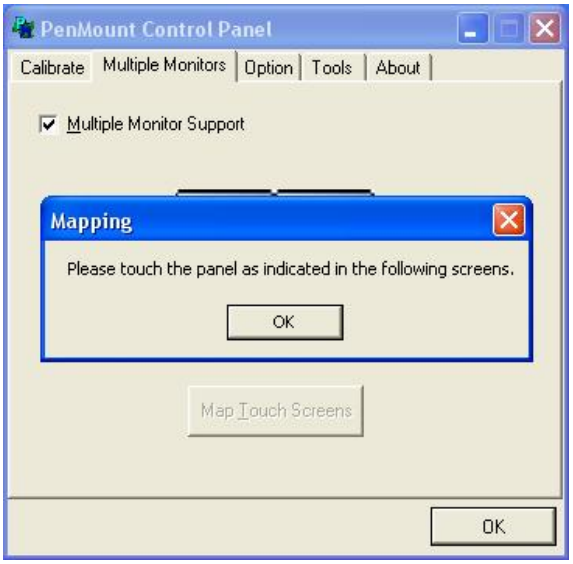
NOTE: The Multiple Monitors function is for use with multiple displays only. Do not use this function if you have only one touch screen display. Please note once you turn on this function the Rotating function is disabled.

Enable the multiple display function as follows:

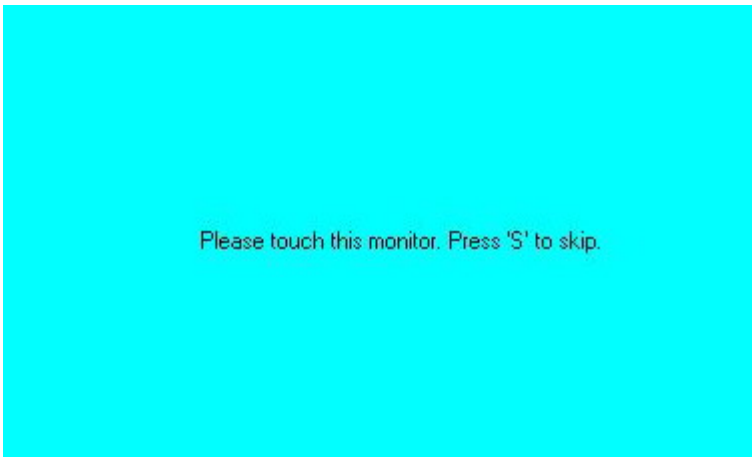
1. Check the **Enable Multiple Monitor Support** box; then click **Map Touch Screens** to assign touch controllers to displays.



2. When the mapping screen message appears, click “**OK**”.

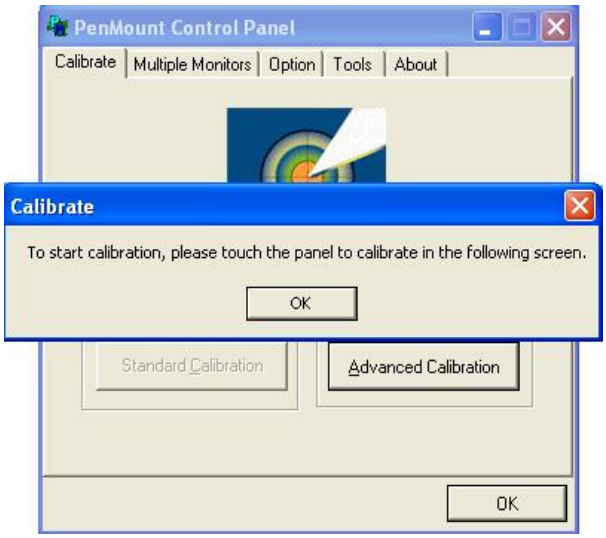


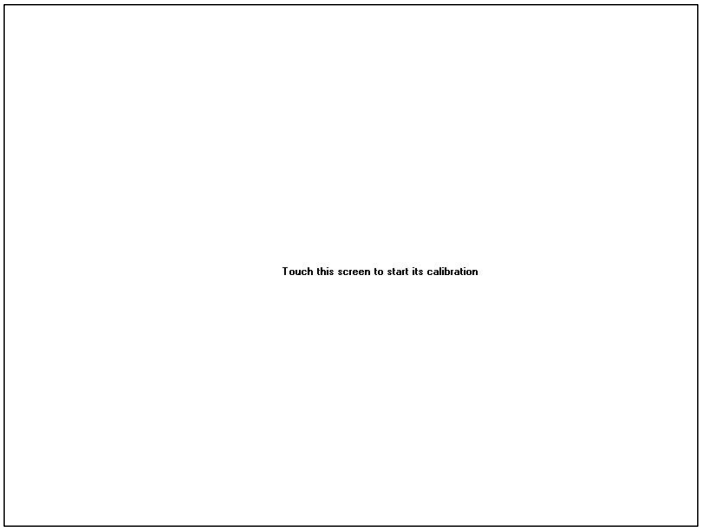
3. Touch each screen as it displays “Please touch this monitor. Press ‘S’ to skip” Following this sequence and touching each screen is called **mapping the touch screens**.



4. Touching all screens completes the mapping and the desktop reappears on the monitors. If screen not mapping touch. Please press ‘S’ to skip.

5. Select a display and execute the ‘Calibration’ function. A message to start calibration appears. Click ‘**OK**’.





1. “Touch this screen to start its calibration” appears on one of the screens. Touch the screen.
2. “Touch the red square” messages appear. Touch the red squares in sequence.
3. Continue calibration for each monitor by clicking **Standard Calibration** and touching the red squares.

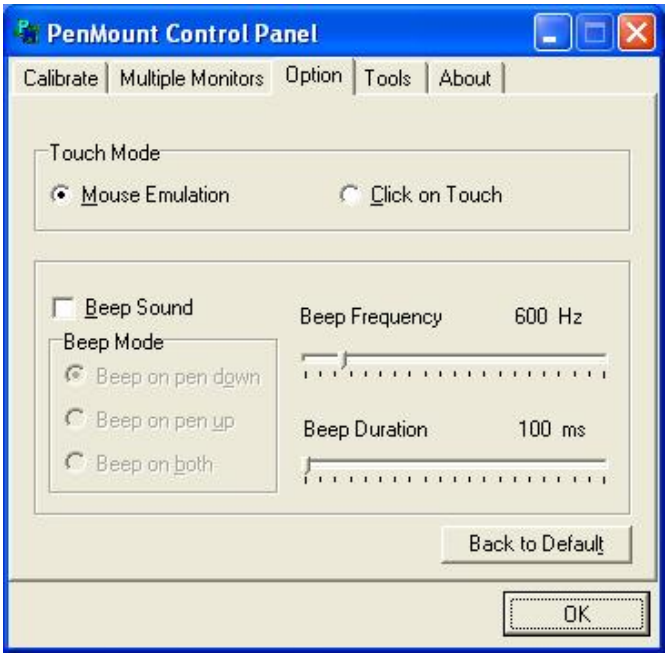
NOTES:

1. If you used a single VGA output for multiple monitors, please do not use the **Multiple Monitors** function. Just follow the regular procedure for calibration on each of your desktop monitors.
2. The Rotating function is disabled if you use the Multiple Monitors function.
3. If you change the resolution of display or screen address, you have to redo **Map Touch Screens** so the system understands where the displays are.
4. If you more monitor mapping one touch screen, please press ‘S’ to skip mapping step.

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.

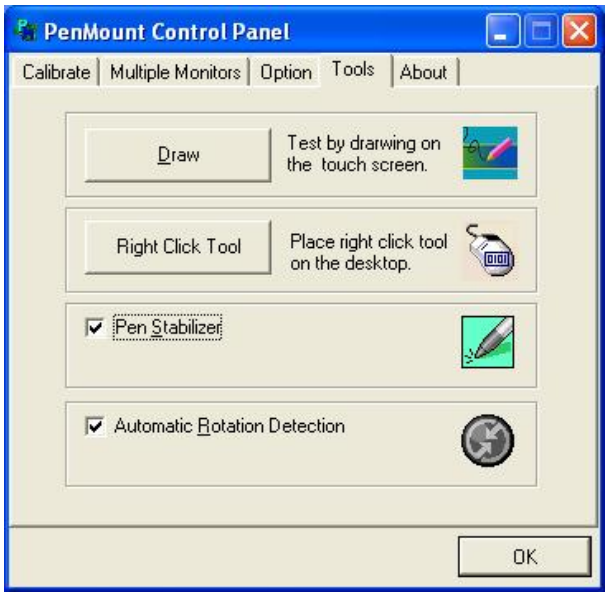
Operation Mode	**This mode enables and disables the mouse's ability to drag on-screen icons—useful for configuring POS terminals.** ***Mouse Emulation* – Select this mode and the mouse functions as normal and allows dragging of icons.** ***Click on Touch* – Select this mode and the mouse only provides 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* – beep occurs when comes down and lifted up** ***Beep Frequency* – modifies sound frequency** ***Beep Duration* – modifies sound duration**



Tools

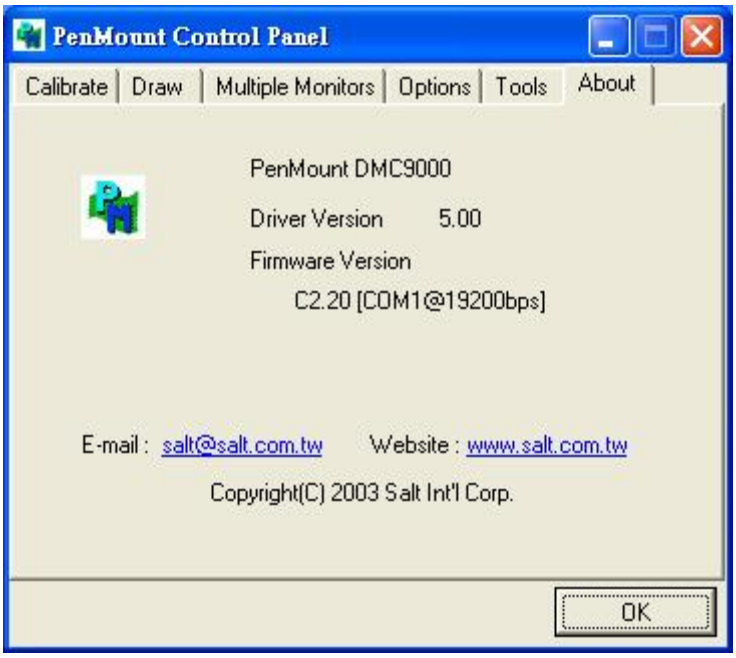
This panel displays have three functions --- Display Right Click Tool, Pen Stabilizer and Automatic Rotation Detection.

Draw	Tests or demonstrates the PenMount touch screen operation.
Right Click Tool	Enable right button function, and show right button area on desktop. 
Pen Stabilizer	Enable the function support to prevent cursor shake.
Automatic Rotation Detection	The function support nVidia, Intel, SMI or ATI and software such as Portrait Pivot Pro rotation automatic detection.



About

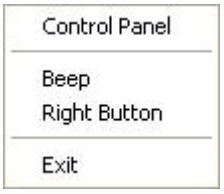
This panel displays information about the PenMount controller and driver version.



PenMount Monitor Menu Icon

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

PenMount Monitor has the following functions.

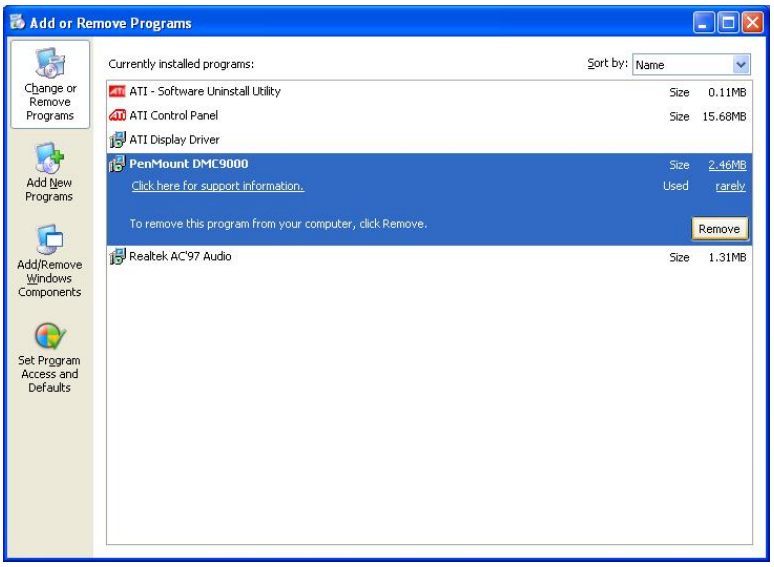


Control Panel	**Open Control Panel Windows**
Beep	**Turns beep on or off.**

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.** 
Exit	**Exits the PenMount Monitor function.**

Uninstall the driver

1. Go to **Settings**, and then click **Add or Remove program**.
   Select **PenMount DMC9000** and click the **Remove** button.



2. Select '**Yes**' to remove the driver.

3. Select '**Yes**' Uninstall the driver from system.

4. Select ‘Yes’ to reboot your system or ‘No’ to reboot your system later.

4.2 USB Touch Panel Driver installation

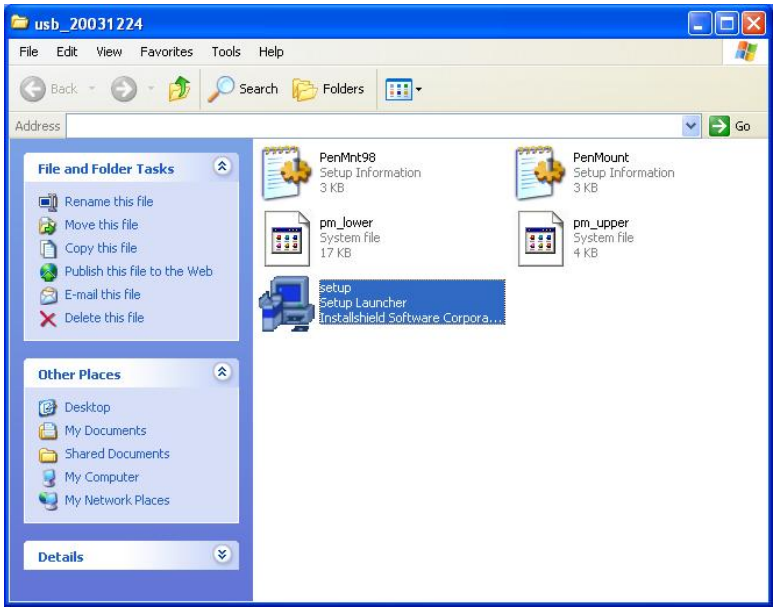
Windows Me/2000/XP USB Driver Installation

Before installing the driver software, you must have the Windows Me/2000/XP system installed and running on your computer. You must also have one of the following USB installed: 5184, 51A5 or 5126. Contents of the Windows Me/2000/XP USB driver folder are listed below.

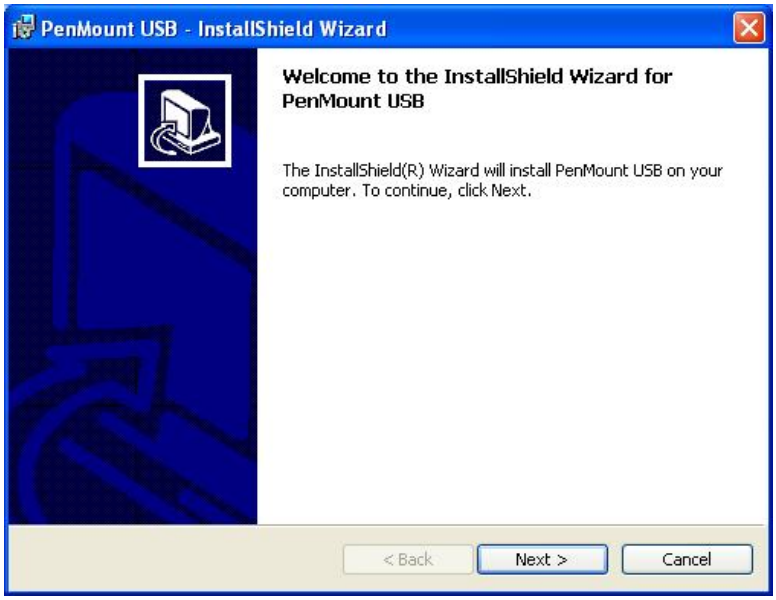
Setup.exe
PenMount 98.inf
PenMount.inf
Pm_lower.sys
Pm_upper.sys

Follow the steps below to install the USB driver.

1. Insert and select the Driver CD-ROM to start installation. Find the USB driver folder and select '**setup**'.

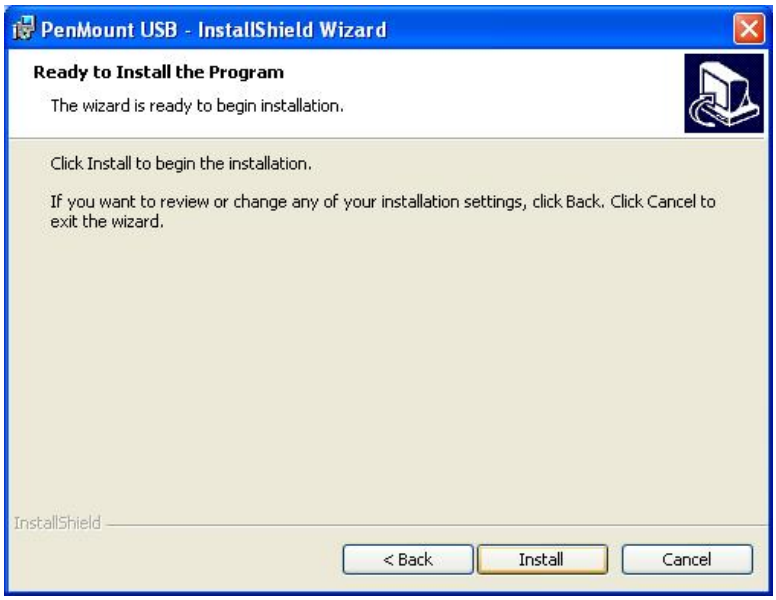


2. The screen displays ‘InstallShield Wizard’. Click ‘**Next**’ to begin installing the USB driver to system.



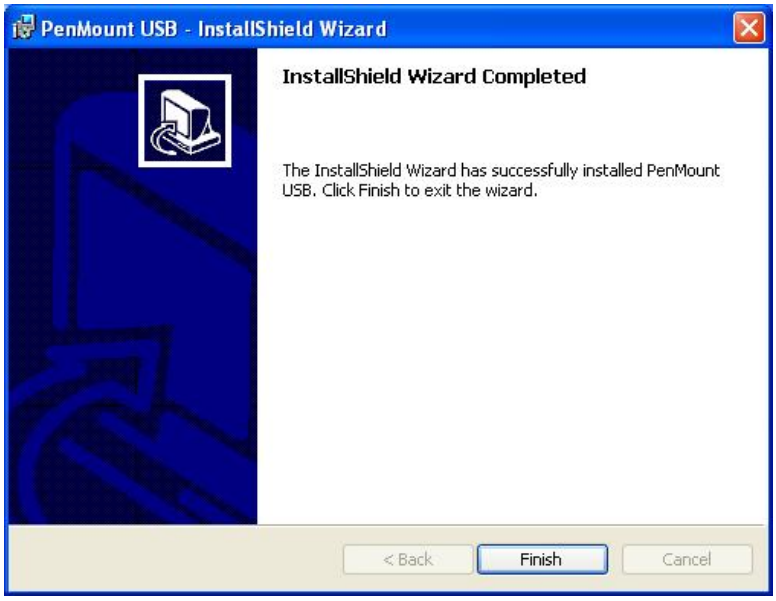
3. The license agreement appears. Click ‘**Next**’.

4. The next screen shows ‘Ready to Install the Program’. Click ‘**Install**’.



5. The ‘InstallShield Wizard completed’ screen appears. Click ‘**Finish**’.

1. If show message box appears stating the driver does not have an MS Logo. Please select ‘Continue Anyway’ to finish the installation. The USB driver is now completely installed.



Configuring the USB Driver

Upon rebooting, the computer automatically finds the new USB interface. 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

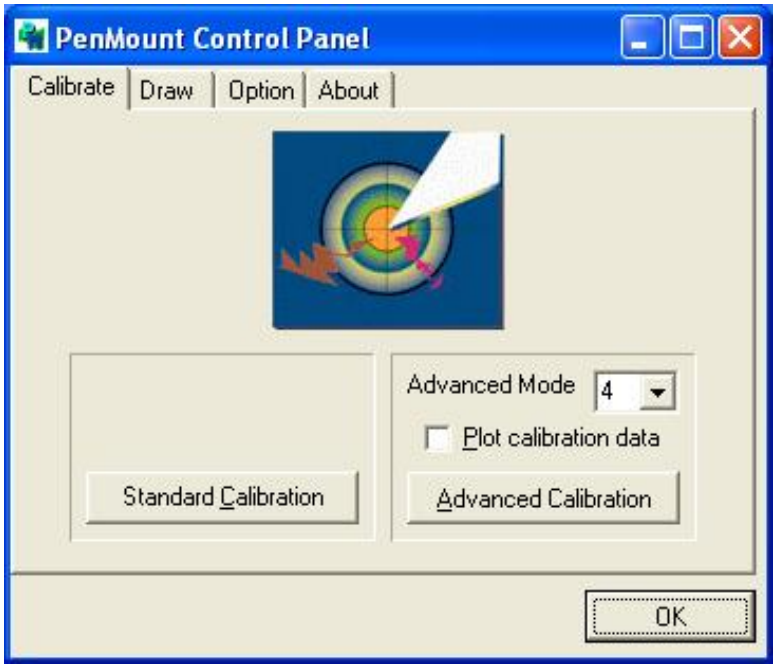
The functions of the PenMount Control Panel are **Calibrate**, **Draw**, and **About**, which are explained in the following sections.

Calibrate

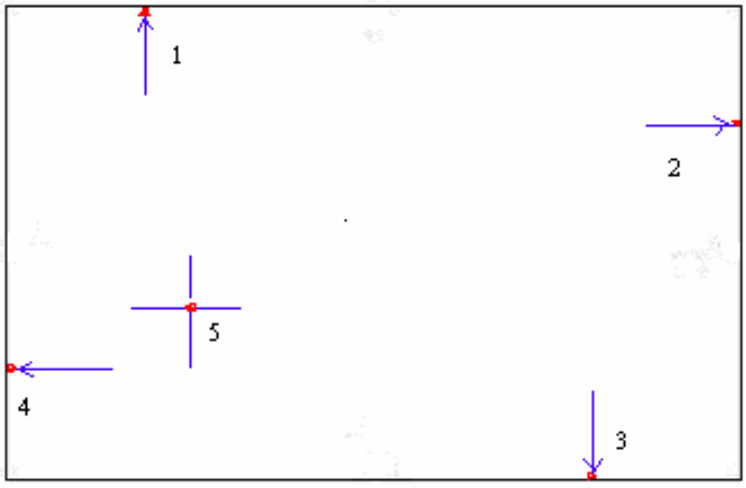
This function offers two ways to calibrate your touch screen. ‘Standard Calibration’ adjusts most touch screens. ‘Advanced Calibration’ adjusts aging touch screens.

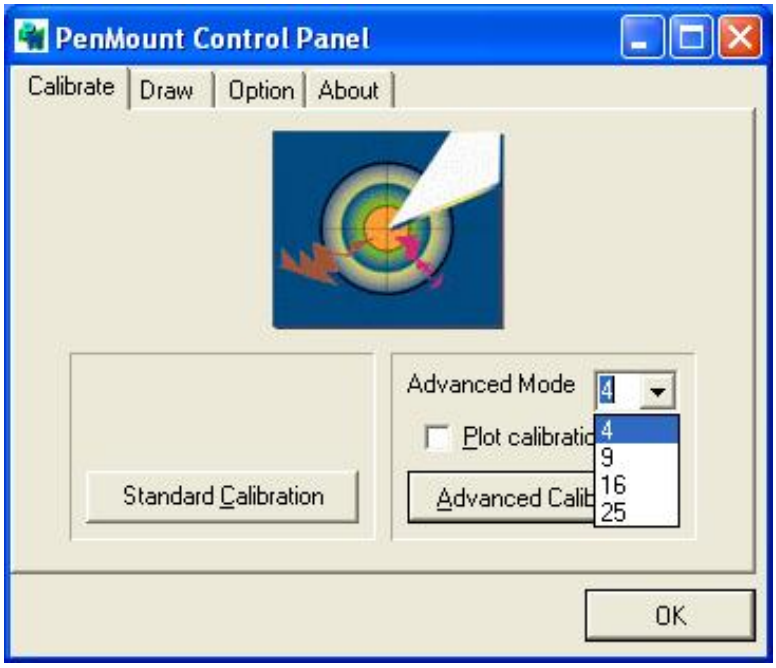
Standard Calibration	**Click this button and arrows appear pointing to red squares. Use your finger or stylus to touch the red squares in sequence. After the fifth red point calibration is complete. To skip, press ‘ESC’.**
Advanced Calibration	**Advanced Calibration uses 4, 9, 16 or 25 points to effectively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

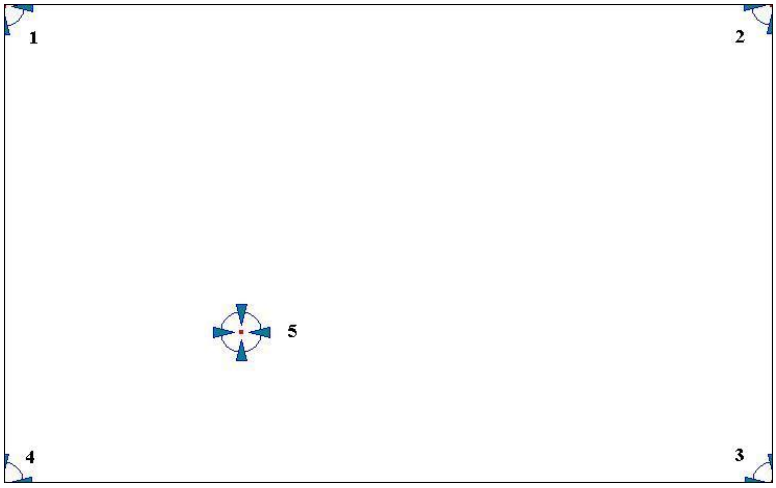
aged touch screens. Click this button and touch the red squares in sequence with a stylus. To skip, press ESC'.



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





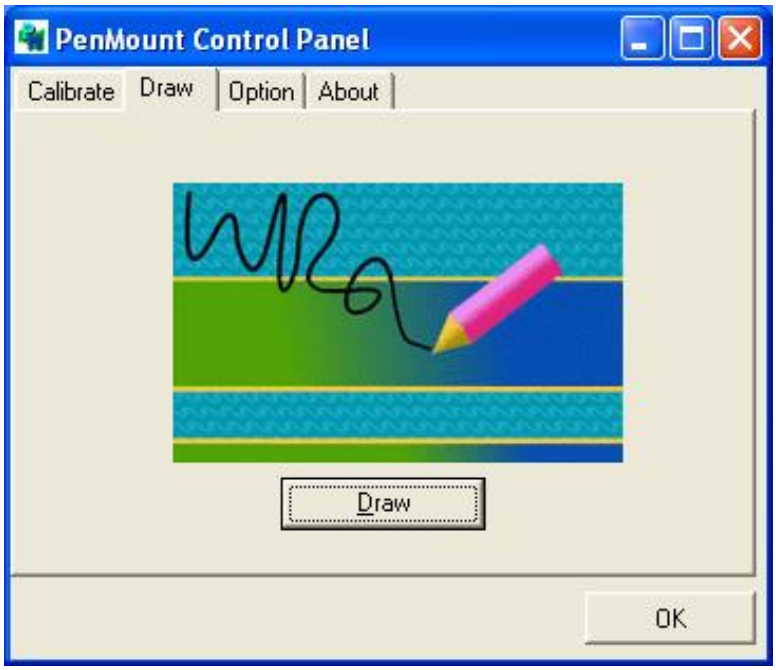


Plot Calibration Data	**Check this function and a touch panel linearity comparison graph appears when you have finished Advanced Calibration. The blue lines show linearity before calibration and black lines show linearity after calibration.**


PenMount Control Panel
Calibrate
Draw
Option
About
Advanced Mode
4
Plot calibration data
Standard Calibration
Advanced Calibration
OK

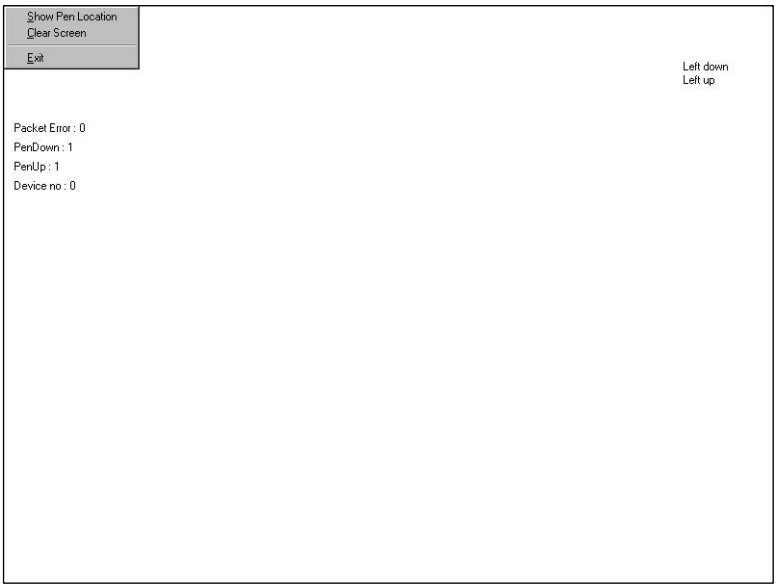
Draw

Tests or demonstrates the 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 registers touch activity such **left**, **right**, **up**, **down**, **pen up**, and **pen down**.

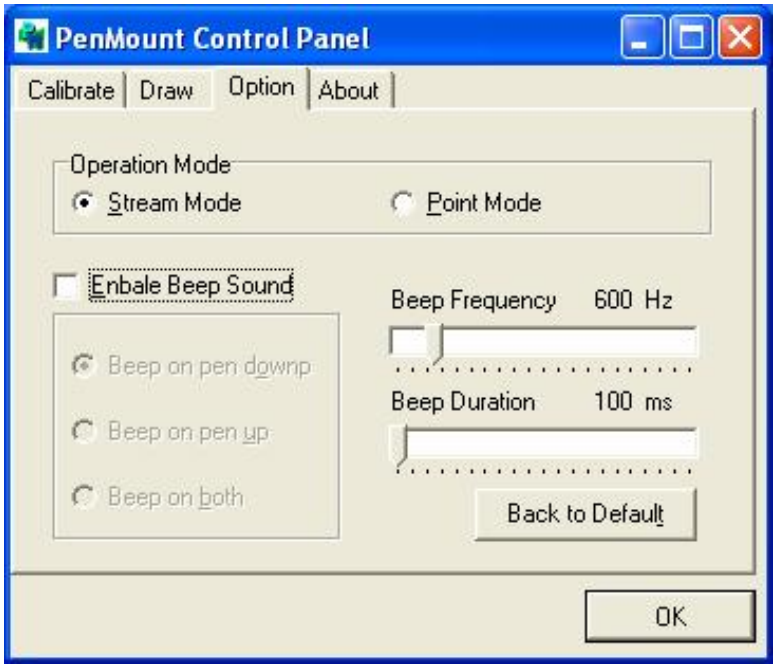
Click Clear Screen to clear the drawing.



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 driver version.

PenMount Monitor Menu Icon

The PenMount monitor icon (PM) appears in the menu bar of Windows Me/2000/XP system after the Windows Me/2000/XP USB driver is installed.

PenMount Monitor has the following functions.

Beep	**Turns touch screen 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.** 
Exit	**Exits the PenMount Monitor function.**

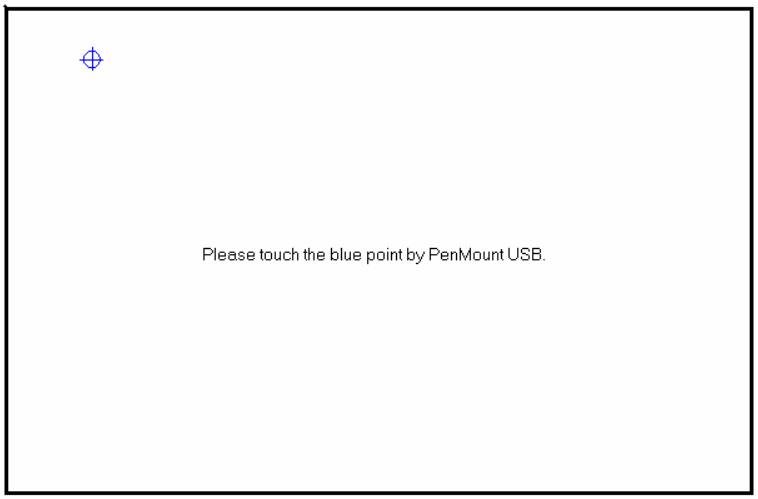
PenMount Rotating Functions

The PenMount driver for Windows Me/2000/XP supports several display rotating software packages. Please see Chapter 5 for more information. 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 Rotate Function

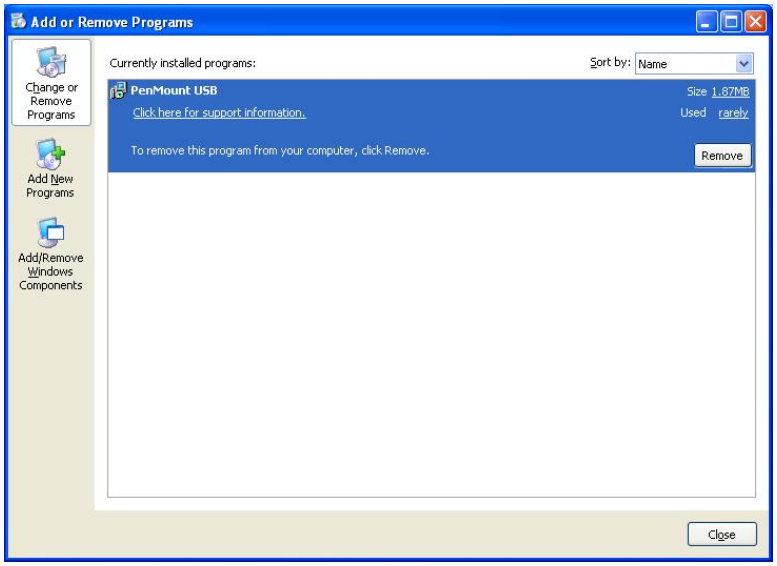
1. Install the rotation software package.
2. Choose the rotate function (0°, 90°, 180°, 270°) in the 3rd party software. The calibration screen appears automatically. Touch this point and rotation is mapped.



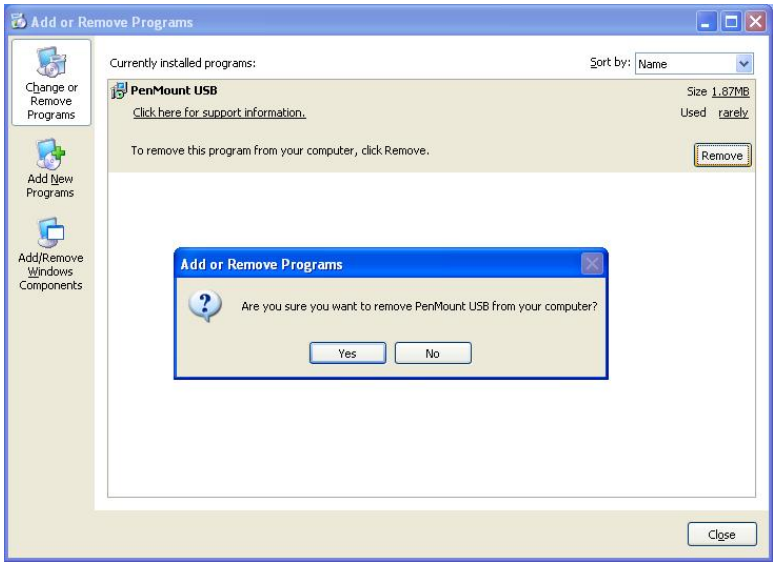
NOTE: The Rotate function is disabled if you use Monitor Mapping.

Uninstall the PenMount Windows Me/2000/XP USB driver

1. Remove the PenMount USB driver from “Start/Control Panel/Add/Remove Programs. Select ‘PenMount USB’ and click ‘**Remove**’.



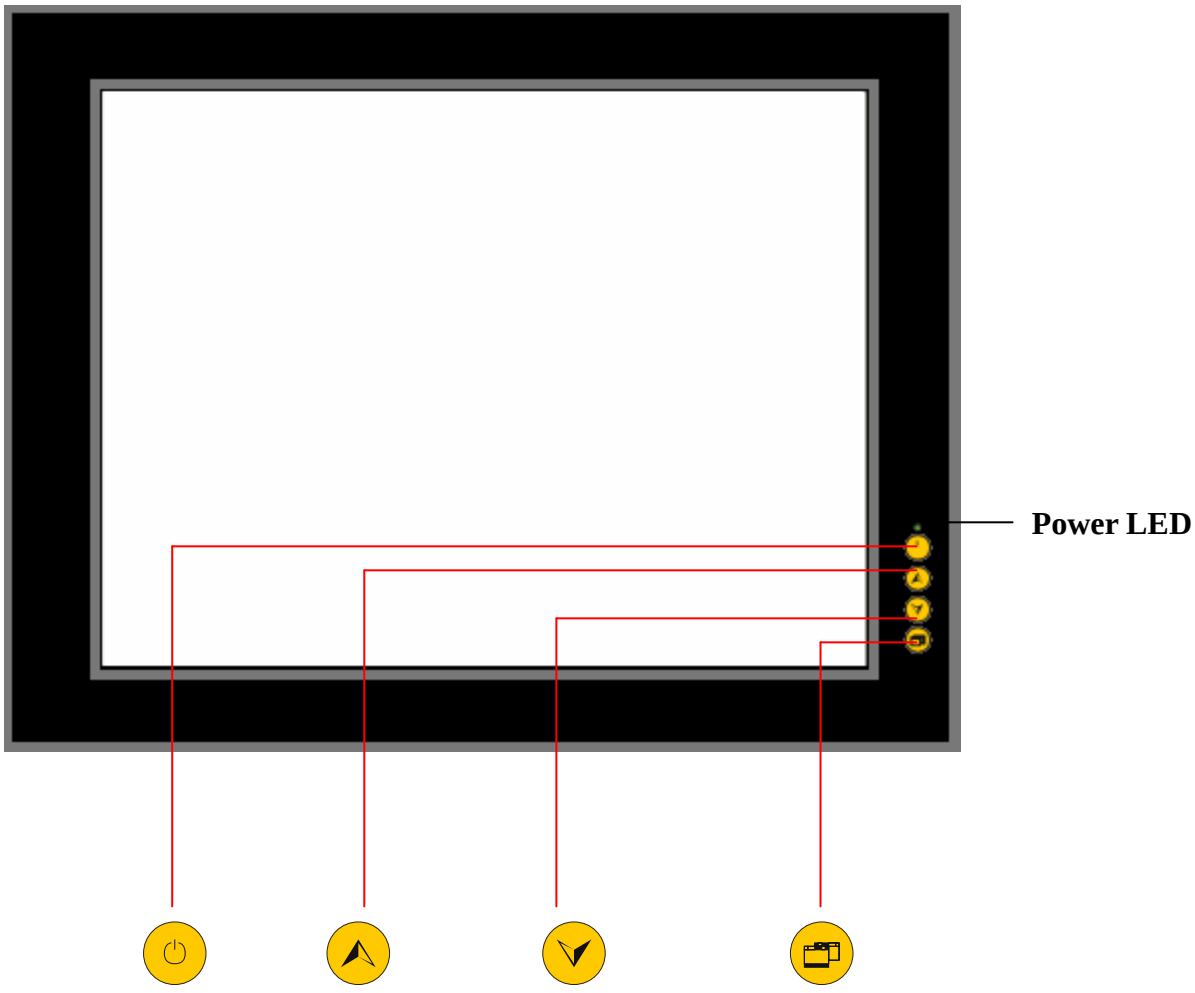
2. Click ‘Yes’ to confirm removal of the driver and the PenMount USB driver is completely removed from the system.



5. OSD (Operation Screen Display)

5.1 Function Key

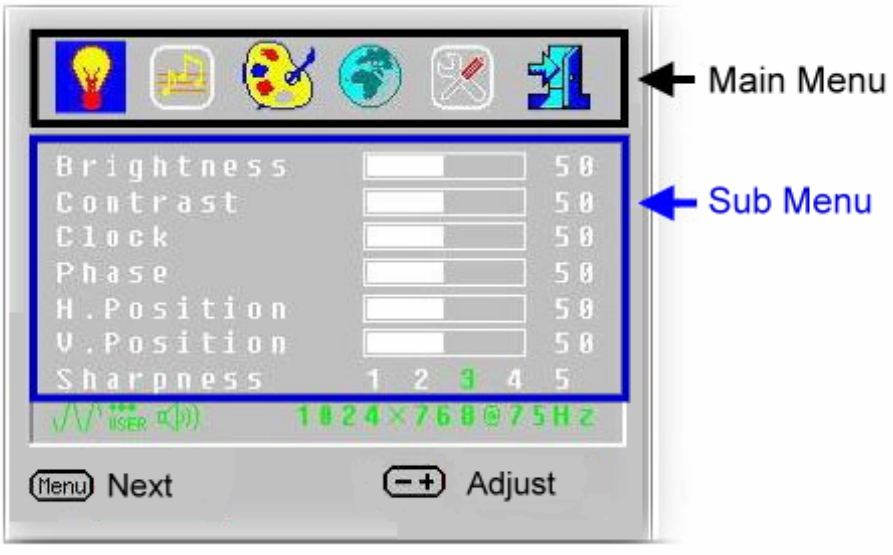
Use the button on the right side to adjust the OSD.

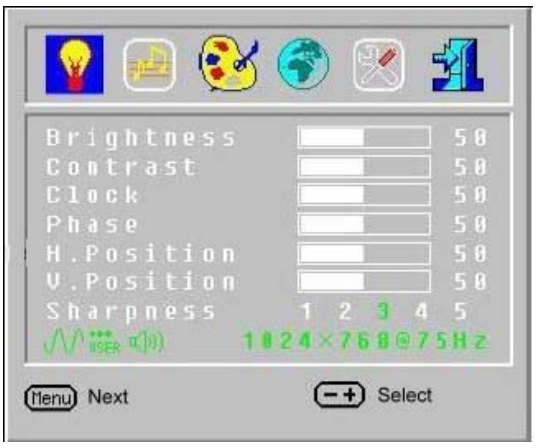


5.2 OSD (Display Mode)

Use the buttons on the right side control panel to adjust the OSD :

1. **Press the <Menu/Select" button > to entry the "Display Mode" dialogue box.**
2. **Move between the functions of the main menu by use of the buttons <Menu / Select>**
3. **Press the button < > to chose a main menu function.**
4. **Moving between the sub-function by use of the buttons <+/Right> and <−/Left>**
5. **Press the button <Select> to choose a sub menu function.**
6. **Adjustment of the sub-menu values by use of the button <Up> and the button <Down>**
7. **Press the button <Select> to choose the sub menu values.**
8. **To save a new setting, select the menu <Adjust> and the option <Save>**
9. **Pree the button <Menu> to leave the sub-menu.**
10. **Press the button <Menu> to leave the main-menu.**





Press "+" or "–" to adjust the Brightness, Contrast, Clock, Phase, H Position, V position and Sharpness.

Brightness – It is used to adjust the brightness of screen. This function will adjust the offset value of ADC. Please take note that setting this value too high or too low will destroy the quality of image.

Contrast – It's used to adjust the contrast of screen, this function will adjust the gain value of ADC. Please take note that adjusting this value too hign or too low will destroy the quality of image.

Clock –

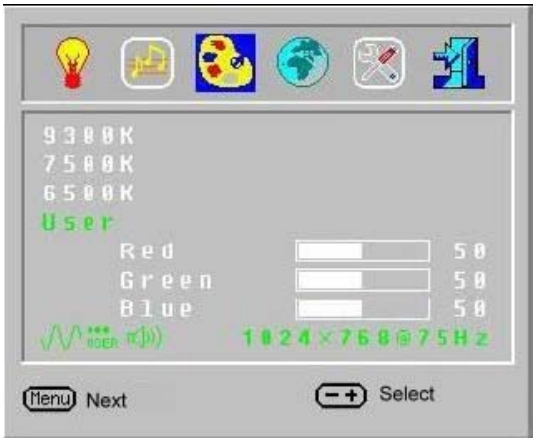
Phase-

H. Position – It's used to adjust horizontal display position of image.

V. Position – It's used to adjust vertical display position of image.

Sharpness – It's used to adjust

Press "+" or "–" to adjust the Volume and Mute.



Press “+” or “–“ to adjust the screen colors.

Press “+” or “–“ to select the language which you need.

Language – It’s used to select the languages using on OSD display, MTM can support 8 languages on OSD display includes English, French, Italian, Deutsch, Japanese, Simple Chinese and Traditional Chinese.

Press “+” or “–“ to select your signal system.

When all of the parameters setting finish, press the “Power / Exit” button to exit parameter dialogue box.

6. Troubleshooting

˙ **No picture:** (There is no picture on the MTM monitor)

→ To make sure the signal cable should be properly connected to the display.

˙ **The Display is too dark or too light**

→ Try to use OSD Menu to adjust the contrast.

If these tips don’t solve your problem, contact our service and request a RMA number by:

TEL: +886 2 2720-6601 ext-11 FAX: +886 2 2345-5120

E-mail: gitta@ms9.hinet.net

Cautions

If this product is used in a house, radio-wave interference might occur to other devices. In the case that it does occur, the user is requested to try a variety of remedies to solve the problem.

Power source

- MTM Series is equipped with DC24V input. If the supply power is other than DC24V, less or excess, it will severely damage the MTM. Therefore, check the switching power supply supporting the DC power regularly.
- To avoid electronic shock, be sure the Power Cable is unplugged from the power outlet when connecting the cable to the HMI.

Grounding

- From the FG terminal at the rear side of MTM, please make sure the grounding is made exclusively.
- When the FG terminal is connect, be sure the wire is grounded. Without grounding, the operation of MTM may be severely affected by excess external noise levels and vibrations.
- Use a cable at 2 mm^2 (AWG 14) to ground the equipment. Ground resistance must be less than 100 Ω (class3).Note that the ground cable must not be connected to the same ground point as the power circuit.

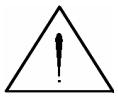
Installation

Mount the monitor from the front of a suitable preserved hole.

- Attached the brackets behind.
- Fasten the screw of the brackets with proper force. Tightening too much may cause damage to the structure of the unit.
- Input and Output signal lines must be separated from the power cables for operational circuits. Use shielded cables or it may cause unpredictable problems.
- Do not allow cut wires, filling, or shavings to fall inside a unit or block when drilling holes or connecting cables/lines.

Environment

- Do not install in areas subject to excessive dust, oily mist, conductive dust, corrosive gas, or flammable gas.
- Do not mount in areas subject to shock or vibration.
- Do not mount in areas subject to high temperature, moisture, or rain.



Indicated loss of life, severe personal injury, or substantial property damage will result if proper precautions are not taken.