

# **TPC-1270**

**Intel Touch Panel Computer  
with High Luminance 12.1"  
SVGA TFT LCD**

## **User Manual**

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## **Product Warranty (2 years)**

Advantech warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Advantech, or which have been subject to misuse, abuse, accident or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Advantech products used, other hardware and software used, etc.) Note anything abnormal and list any onscreen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandize authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

## **Declaration of Conformity**

### **CE**

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

### **FCC Class A**

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### **Technical Support and Assistance**

- Step 1. Visit the Advantech web site at **[www.advantech.com/support](http://www.advantech.com/support)** where you can find the latest information about the product.
- Step 2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
  - Product name and serial number
  - Description of your peripheral attachments
  - Description of your software (operating system, version, application software, etc.)
  - A complete description of the problem
  - The exact wording of any error messages

## **Safety Instructions**

1. Read these safety instructions carefully.
2. Keep this User's Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
  - a. The power cord or plug is damaged.
  - b. Liquid has penetrated into the equipment.
  - c. The equipment has been exposed to moisture.
  - d. The equipment does not work well, or you cannot get it to work according to the user's manual.
  - e. The equipment has been dropped and damaged.
  - f. The equipment has obvious signs of breakage.
15. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -**

20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.

16. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

### **Wichtige Sicherheitshinweise**

1. Bitte lesen sie Sich diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie Keine Flüssig-oder Aerosolreiniger. Am besten dient ein angefeuchtetes Tuch zur Reinigung.
4. Die NetzanschlusSteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Verletzungen hervorrufen.
7. Die Belüftungsöffnungen dienen zur Luftzirkulation die das Gerät vor überhitzung schützt. Sorgen Sie dafür, daB diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim. AnschluB an das Stromnetz die AnschluBwerte.
9. Verlegen Sie die Netzanschlusleitung so, daB niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen die sich am Geräten befinden sind zu beachten.

11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
  - a - Netzkabel oder Netzstecker sind beschädigt.
  - b - Flüssigkeit ist in das Gerät eingedrungen.
  - c - Das Gerät war Feuchtigkeit ausgesetzt.
  - d - Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
  - e - Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
  - f - Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. **VORSICHT:** Explisionsgefahr bei unsachgemabem Austausch der Batterie.Ersatz nur durch denselben oder einem vom Hersteller empfohlene-mahnlichen Typ. Entsorgung gebrauchter Batterien navh Angaben des Herstellers.
16. **ACHTUNG:** Es besteht die Explosionsgefahr, falls die Batterie auf nicht fach-männische Weise gewechselt wird. Verfangan Sie die Batterie nur gleicher oder entsprechender Type, wie vom Hersteller empfohlen. Entsorgen Sie Batterien nach Anweisung des Herstellers.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weiger.

Haftungsausschluss: Die Bedienungsanleitungen wurden entsprechend der IEC-704-1 erstellt. Advantech lehnt jegliche Verantwortung für die Richtigkeit der in diesem Zusammenhang getätigten Aussagen ab.





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## **General Information**

Sections include:

- Introduction
- Specifications
- LCD Specifications
- Touchscreen Specifications
- Power
- I/O Ports Arrangement
- Panel Mounting
- Dimensions & Cutout

# Chapter 1 General Information

## 1.1 Introduction

---

The TPC-1270 touch panel computer is state-of-the-art HMI (Human Machine Interface). This 12.1" display operator interface is an x86-based platform with these key features:

**Fanless:**

By using a low power processor, the system does not have to rely on fans, which often are unreliable, and causes dust to circulate inside the equipment.

**Bright Display:**

The bright TFT LCD display suits industrial demands for clear interfaces.

**Powerful Communication Capability:**

The TPC-1270 provides powerful IO interface for easily communicating with other devices. The IO interface includes serial ports, RS-485 port, Ethernet and USB 2.0 support.

**Embedded Windows Support:**

In addition to the OS support of Windows XP, Advantech offers platform support for XP embedded.

## 1.2 Specifications

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### 1.2.1 System Kernel

**CPU:** Intel Pentium M, Celeron M (clock rate 1.4GHz/ 1GHz)

**BIOS:** Award 4Mbit flash memory

**South Bridge:** Intel 915GME

**VGA:** VGA: Intel 915GME

**Ethernet:** TPC-1270H-P1E (LAN1: ICH6(82801FB) & 82562EZ, LAN2: Intel 82541PI); TPC-1270H-C1E (LAN1: ICH6(82801FB) & 82562EZ, LAN: Intel 82551QM)

**Watchdog timer:** W83627 watchdog timer; 1.6 second timeout period

**IDE:** 2 EIDE channels support one IDE compact flash socket on board and one 44 pin (2mm) connector.

### **1.2.2 I/O Ports**

**4 Serial Ports:** RS-232 (COM1, COM2, COM3) and RS-232/422/485 (COM4)

**2 RJ-45 Ethernet port:**

TPC-1270H-P1E, LAN 1(10/100BaseT); LAN 2(10/100/1000BaseT)

TPC-1270H-C1E, LAN 1(10/100BaseT); LAN 2(10/100BaseT)

**4 USB Ports:** Compliant with USB 2.0

**1 CompactFlash Slot: TypeII**

**1 PCI-104**

**1 VGA**

**2 Audio Ports: 1 MIC-in, 1 Line-out**

### **1.2.3 Safety and Environment**

#### **Safety**

FCC Class A and CE certificated

BSMI certificated

The front bezel is compliant with NEMA 4

#### **Environment**

**Operating Temperature:** 0~50 degrees Celsius

**Storage Temperature:** -20~70 degrees Celsius

**Humidity:** 10~95% @ 40 relative humidity (non-condensing)

**Vibration:** 1Grms (5~500Hz)

### 1.3 LCD Specifications

---

<b>Display Type</b>	TFT color LCD
<b>Size (diagonal)</b>	12.1"
<b>Maximum Resolution</b>	800 x 600 (SVGA)
<b>Maximum colors</b>	262K
<b>Pixel Pitch (W x H)</b>	0.3075 x 0.3075 mm
<b>Viewing Angle</b>	140° (H), 120° (V); CR>=10
<b>Luminance (cd / m<sup>2</sup>)</b>	350
<b>Contrast Ratio</b>	500
<b>Operating Temperature</b>	-10~65° C (Ambient)
<b>Backlight</b>	2 CCFL
<b>Backlight Life Time</b>	50,000 hours

<b>Note</b>	<i>There might be several bright or dark pixels on the LCD. This comes from the production of the LCD. Such phenomenon is claimed to be normal according to the LCD manufacturers.</i>
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## 1.4 Touchscreen Specifications

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<b>Touchscreen Type</b>	Resistive
<b>Base Glass Construction</b>	Tempered Glass
<b>Resolution</b>	1024 x 1024
<b>Light Transmission</b>	80% typical
<b>Controller</b>	USB Interface
<b>Power Rating</b>	3.3 to 5V
<b>Durability</b>	1 million touches

## 1.5 Power

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**Input voltage:** 18 ~ 32 Vdc (the fuse will be open circuit as input level exceeds 33Vdc)

**Typical:** 24V@2.5A (60W)

## 1.6 I/O Port Arrangement

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The arrangement of the I/O ports is shown in Figure 1.1.



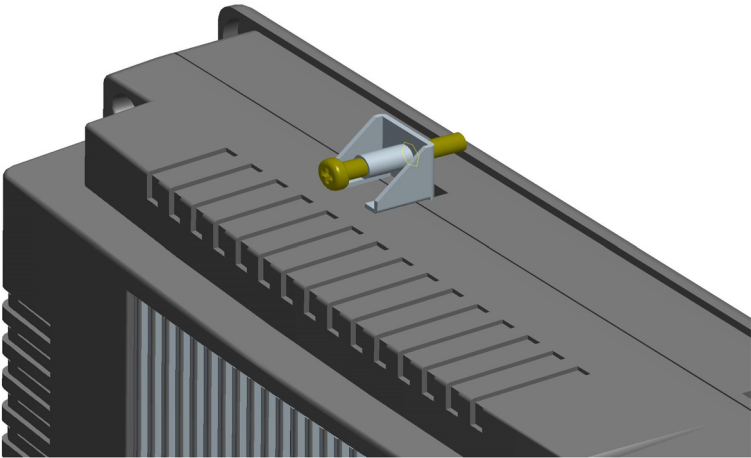
*Figure 1.1: I/O port arrangement*



## 1.7 Panel Mounting

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1. There is a piece of adhesive waterproof gasket on the Mg-AL front bezel. Make sure the waterproof gasket is in position before installing the TPC-1270 to the panel opening.
2. Install the TPC-1270 to the panel opening.
3. Find out the eight clampers and eight long screws in the accessory pack. Hook those clampers to those holes around the four sides of the bezel. Insert the screws to every clammer and fasten them. These screws will then push on the mounting panel and fix the unit.
4. The mounting panel thickness is suggested to be less than 10mm (0.236 inch).



*Figure 1.2: Panel Mounting*

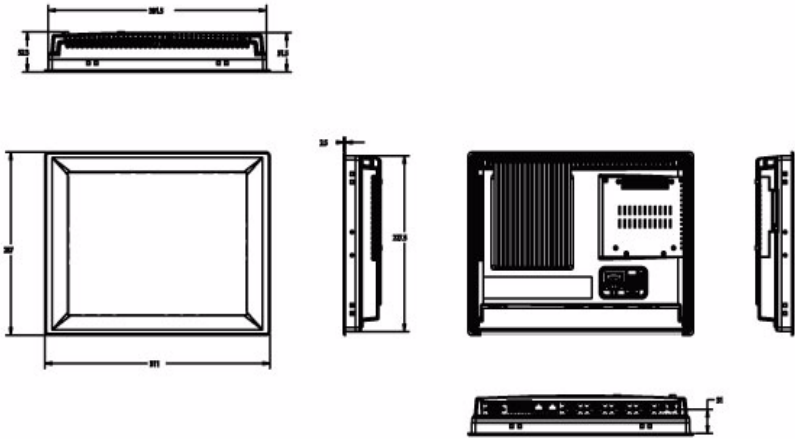
## 1.8 Dimensions & Cutout

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**Weight::** 3.5 Kg (without HDD)

**Dimensions:** 311 x 237 x 65 mm (WxHxD)

**Cutout:** 312.5 x 228.5 mm (suggested)



*Figure 1.3: Dimensions*

CHAPTER  
**2**

**System Setup**

# Chapter 2 System Setup

This chapter provides a brief explanation for operating the TPC-1270. It is easy to make the TPC-1270 start working with the below step-by-step.

Step 1: Unpack the TPC-1270 package. Please check the packing list at the beginning of this manual.

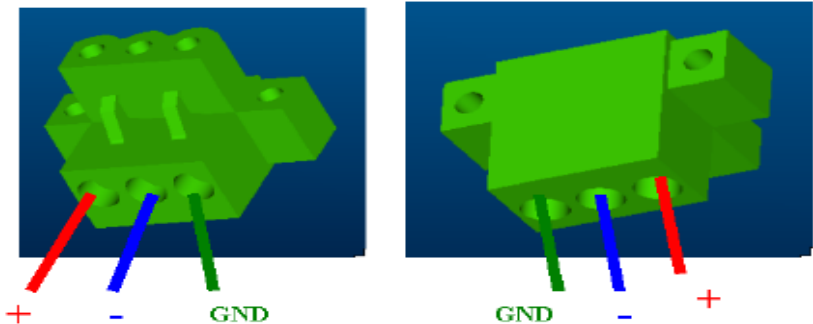
Step 2: Install a CompactFlash containing Windows XP Embedded or other operating system.



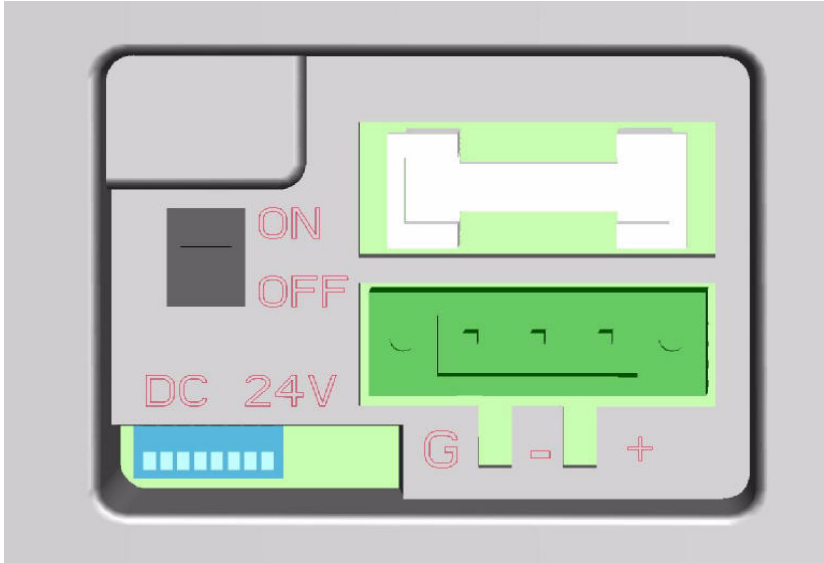
**Figure 2.1: Install CompactFlash memory card**

<b>Warning</b>	<i>It is suggested to turn OFF system power as plug in or pull out the memory card, though the CompactFlash memory is supposed to be hot swappable.</i>
----------------	---------------------------------------------------------------------------------------------------------------------------------------------------------

Step 3: Connect the power connector to the 24VDC power lines. The power lines can either be of some power adapter or in-house power source.



**Figure 2.2: Power connector**



**Figure 2.3: Power receptor and button pin assignments**

Step 4: Plug the power lines to the system power receptor.

Step 5: Push the power button to power on the system as the figure 2.4.

Step 6: Calibrate the touchscreen. Please go to:

“Start” → “Settings” → “Control Panel” as the figure 2.5. Then, click the tab “Stylus -> “Calibration” -> “Recalibrate” to calibrate by selecting the standard calibration or advanced calibration.



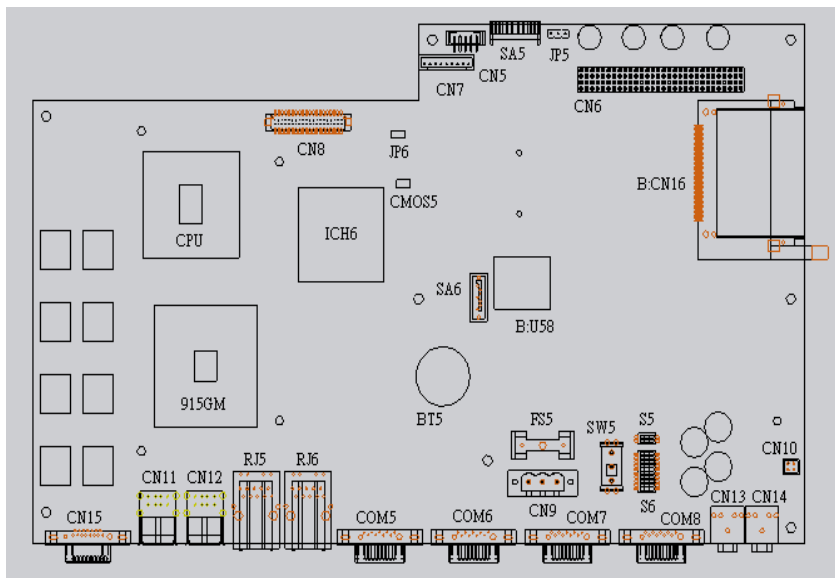
CHAPTER  
**3**

**I/O Connectors &  
Setting Mode**

## Chapter 3 I/O Connector & Setting Mode

CN5	LCD POWER	LCD INVERTER Connector
CN6	PCI-104	PCI-104
CN7	TOUCH	Internal Touch screen Connector
CN8	LVDS LCD	Internal 18bit LVDS LCD Connector
CN9	PWR DC IN	DC Power in Connector, HOUSING 5.08 MM 3P
CN10	SPEAKER OUT	Internal Speaker Connector
CN11	USB	Two USB Type-A Female to on panel.
CN12	USB	Two USB Type-A Female to on panel.
CN13	MIC IN	Audio MIC IN
CN14	LINE OUT	Audio Line OUT
CN15	VGA	D-Sub 15-pin (Female) on panel.
CN16	CF	Compact-Flash socket
COM1	COM1	Serial port:COM1 RS232
COM2	COM2	Serial port:COM2 RS232
COM3	COM3	Serial port:COM3 RS232
COM4	COM4	Serial port:COM4 RS232/422/485
RJ5	LAN1	ICH6M+82562EZ 10/100
RJ6	LAN2	10/100 82551QM / GIGA 82541PI
BT5	Battery	Battery socket
JP5	PCI-104 PWR	Selection of PCI-104 Power
JP6	RESET	RESET
CMOS5	CLEAR CMOS	CLEAR CMOS
S1	COM4 MODE1	Setting COM4 RS232/422/485 mode
S2	COM4 MODE2	Setting COM4 RS422 Master or Slave mode
SA5	SATA-PWR	D-Sub 25-pin (Female) on panel.
SA6	SATA	Internal IDE 44pin(2mm) connector
SW5	POWER SWITCH	System Power Switch
U58	BIOS	BIOS flash socket
FS5	FUSE	FUSE Holder







# CHAPTER 4

## Software Configuration

Sections include:

- Utilities & Drivers
- Advantech COM Driver Installation
- Watchdog Timer Driver Installation

# Chapter 4 Software Configuration

A support CD-ROM for TPC-1270 is available and along with the product. There are related utilities and drivers for TPC-1270 included. Please install the Chipset INF driver, VGA graphics driver, LAN driver, audio driver, Advantech.com driver, Touchscreen driver and Watchdog Timer (WDT) driver sequentially.

## 4.1 Utilities & Drivers

---

The following utilities and drivers are provided for TPC-1270. You can also find the updated utilities and drivers from the support website.

### 4.1.1 Intel Chipset Software Installation Utility

**Path:** \TPC-1270H\Driver\INF\English (for English version)

\TPC-1270H\Driver\INF\Multilanguage (for Multilanguage)

**Available for the OS's below:**

- Microsoft Windows XP

### 4.1.2 VGA Drivers (Intel(R) Graphics Driver)

**Path:** \TPC-1270H\Driver\VGA\

**Available for the OS's below:**

- Microsoft Windows XP

### 4.1.3 Intel PRO Network Drivers/software

**Path:** \TPC-1270H\Driver\LAN\

**Available for the OS's below:**

- Microsoft Windows XP

### 4.1.4 Advantech COM Driver

**Path:** \TPC-1270H\Driver\Advantech COM\

**Available for the OS's below:**

- Microsoft Windows XP

### 4.1.5 Touchscreen Driver

Path: \TPC-1270H\Driver\PenMount\

Available for the OS's below:

- Microsoft Windows XP

### 4.1.6 Watchdog Timer Driver

Path: \TPC-1270H\Driver\WDT\8362x

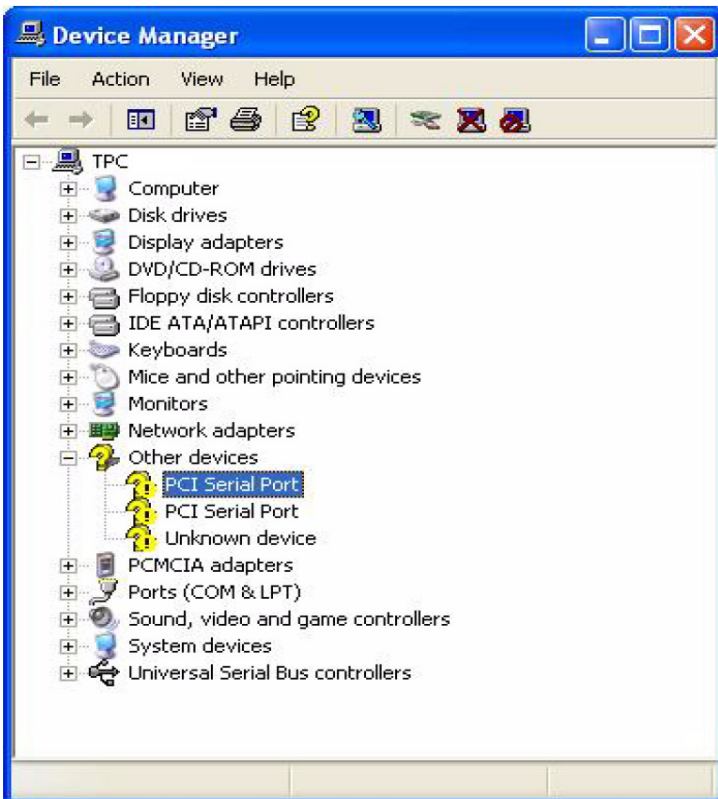
Available for the OS's below:

- Microsoft Windows XP

## 4.2 Advantech COM Driver Installation

---

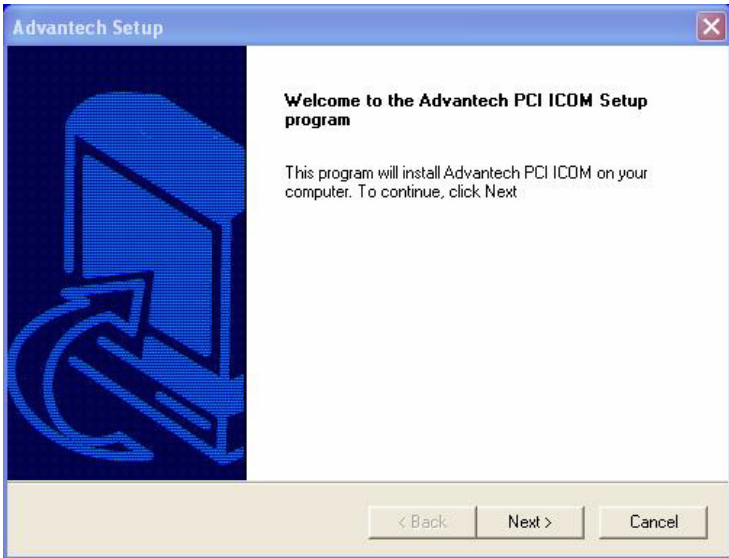
A com port named COM2, COM3 or COM4 on TPC-1270 is Advantech Special com port. Please follow the steps below to install the driver.



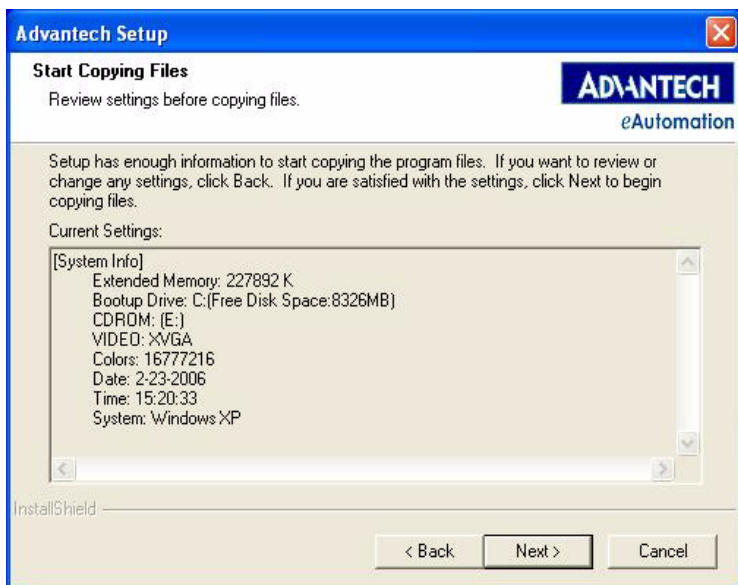
Step 1: Insert the companion CD-ROM into your CD-ROM drive. Open the directory: \TPC-1270H\Driver\Advantech COM\



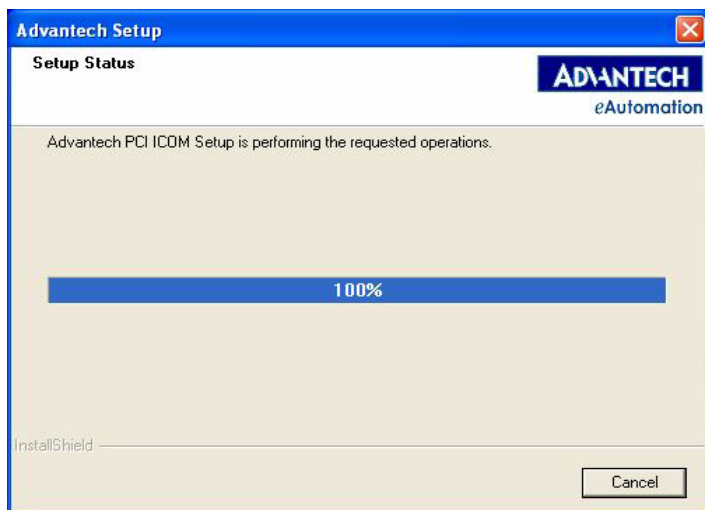
Step 2: Use Windows Explorer (or Windows Run command) to execute PCI\_ICOM.EXE from the companion CD-ROM.



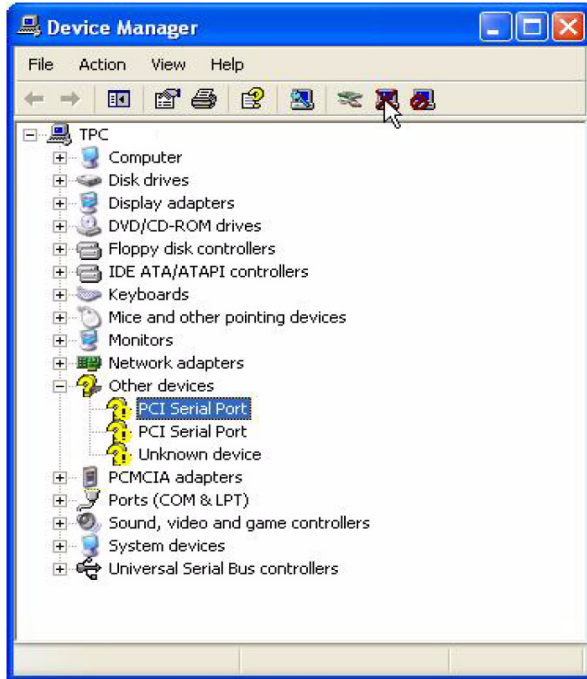
Step 3: Click *Next* to continue installation.



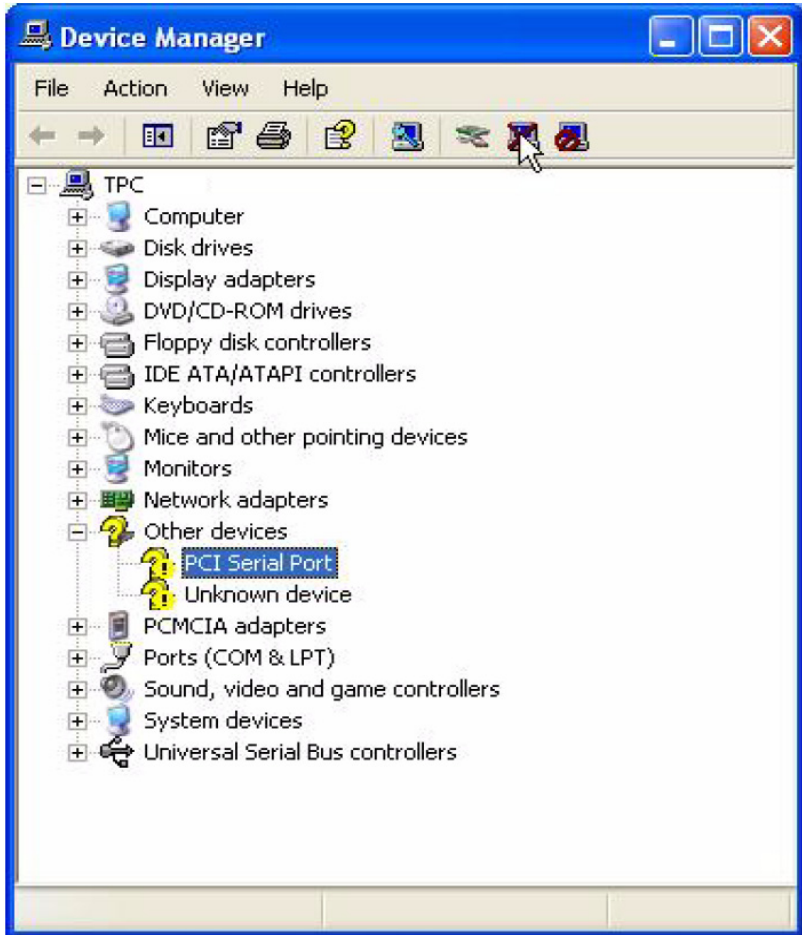
Step 4: Click *Next* to continue installation.



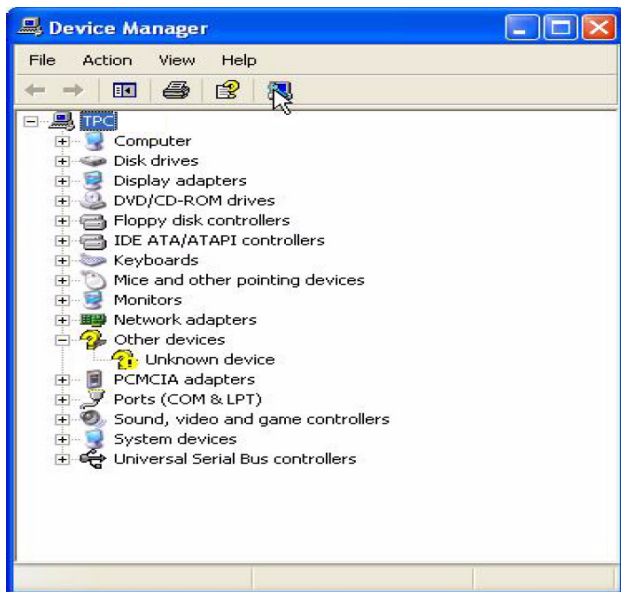
Step 5: Click *uninstall icon* to remove ?PCI Serial Port







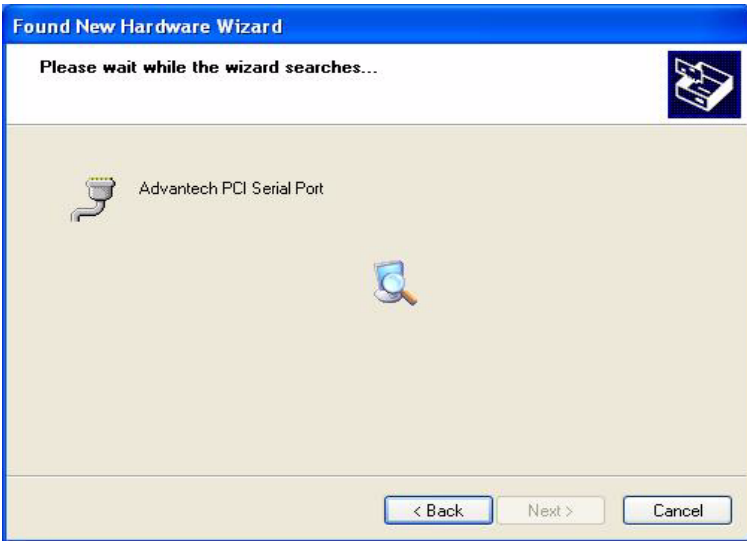
Step 6: Click the *scan for hardware changes* icon to remove ?PCI Serial Port



Step 7: Found New Hardware and Click *Next* to continue installation.



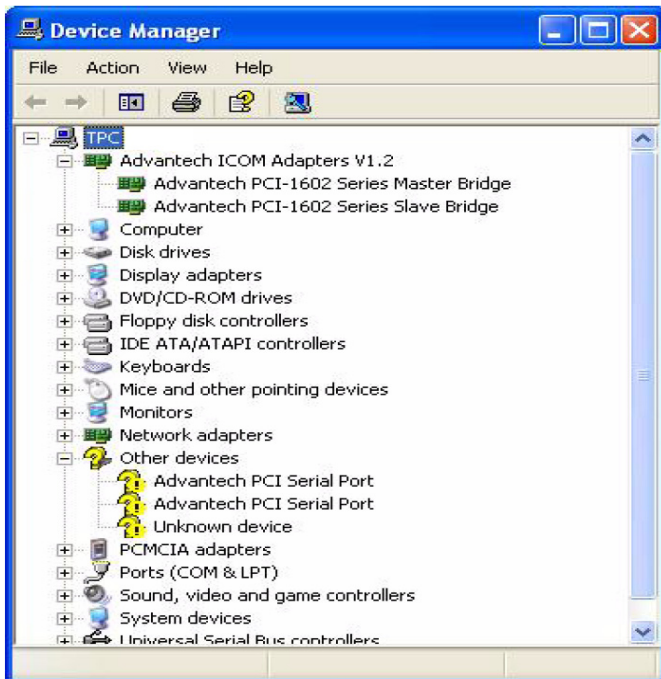
Step 8: Click *Finish the Advantech PCI Serial Port* to continue.



Step 9: Then, found New Hardware and Click *Next* to continue.



Step 10: Click Finish the Advantech PCI-1602 Serial SlaveBridge to continue installation.

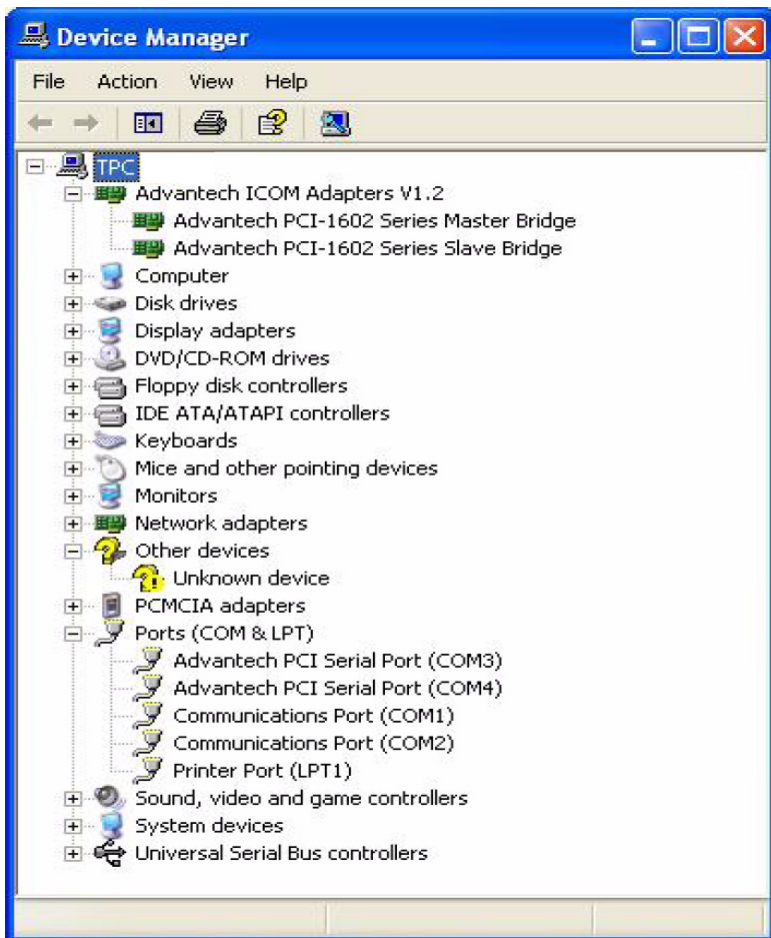


Step 11: Found New Hardware and Click *Next* to continue installation.



Step 12: Click *Finish the Advantech PCI Serial Port* to continue.





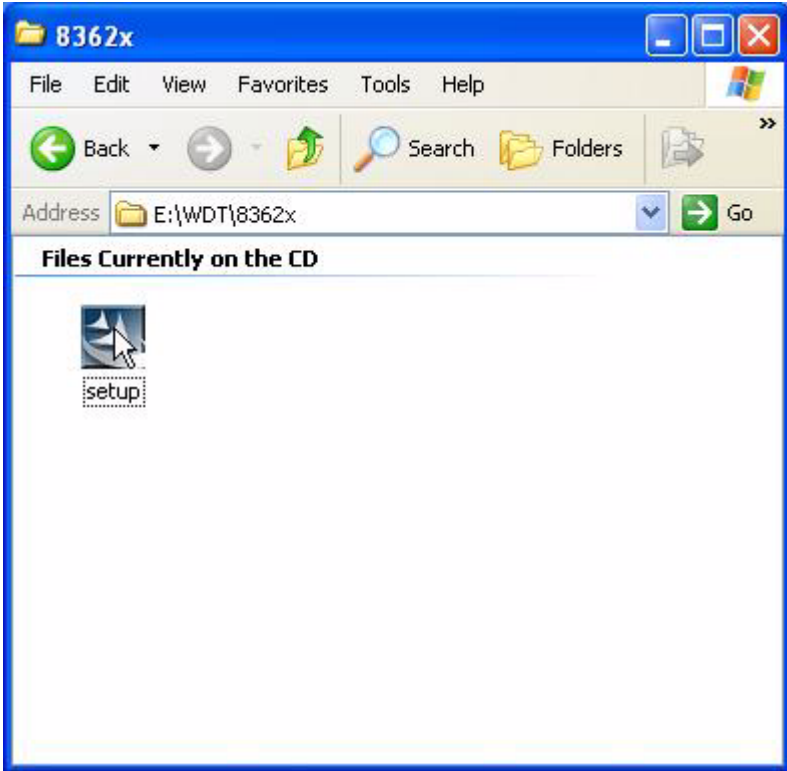
### 4.3 Watchdog Timer (WDT) Driver Installation

---

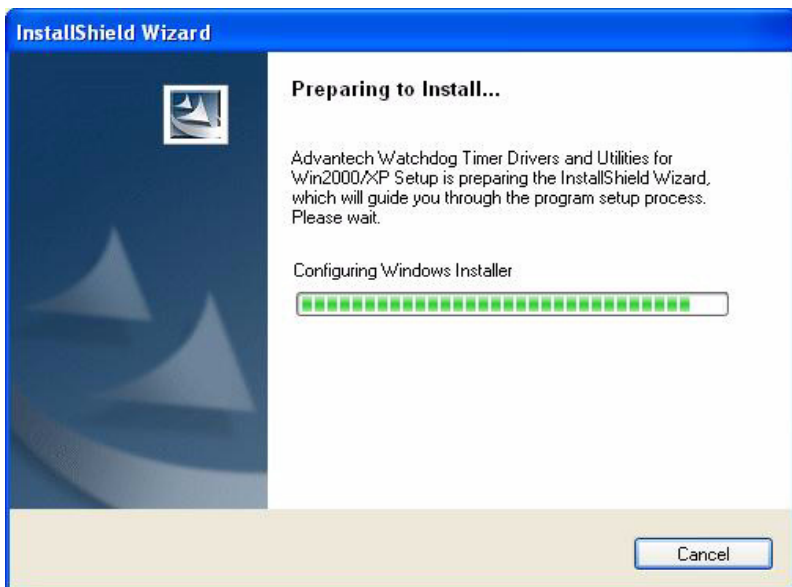
In order to ensure reliable and fail-safe performance, TPC-1270 has a built-in Watchdog Timer to handle unexpected system failures. TPC-1270 provides the drivers and a utility to activate and configure the timer for Windows XP operating systems. The following is a brief introduction, using XP as an example, for the installation and configuration procedures.

### 4.3.1 Installing the TPC-1270 Watchdog Timer Driver

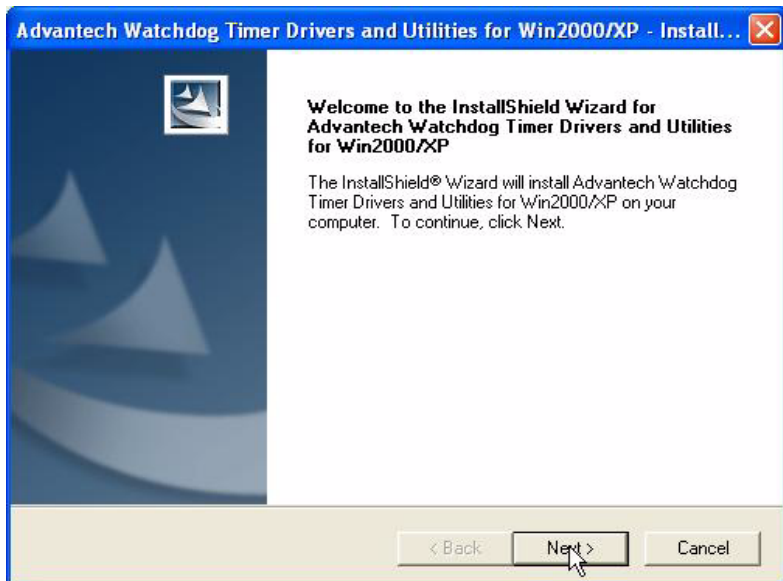
Step 1: Insert the companion CD-ROM into your CD-ROM drive. Open the directory: \WDT\8362x\W2K\_XP.



Step 2: Use Windows Explorer (or Windows Run command) to execute SETUP.EXE from the companion CD-ROM.

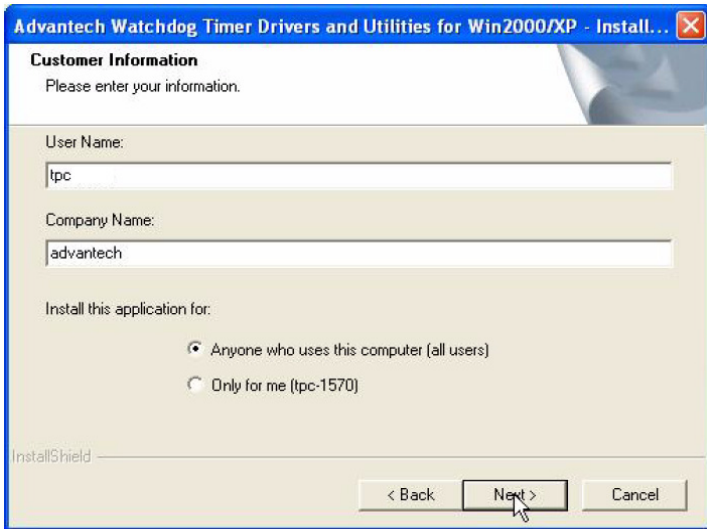


Step 3: Click Next to proceed.

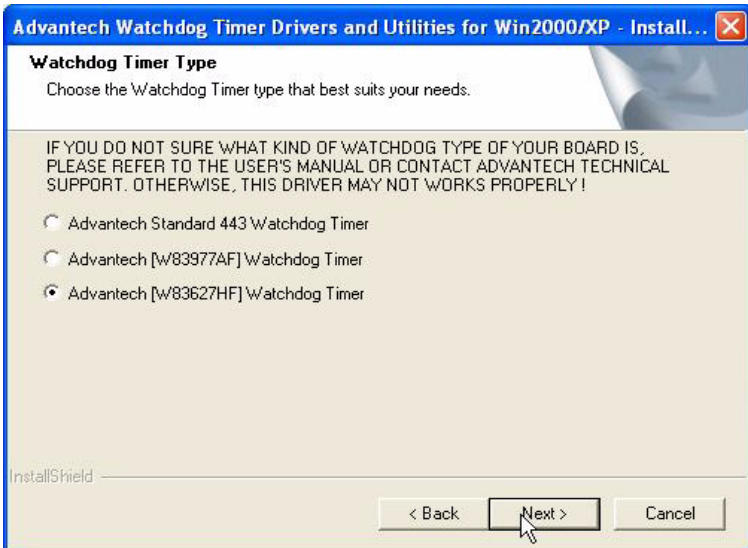




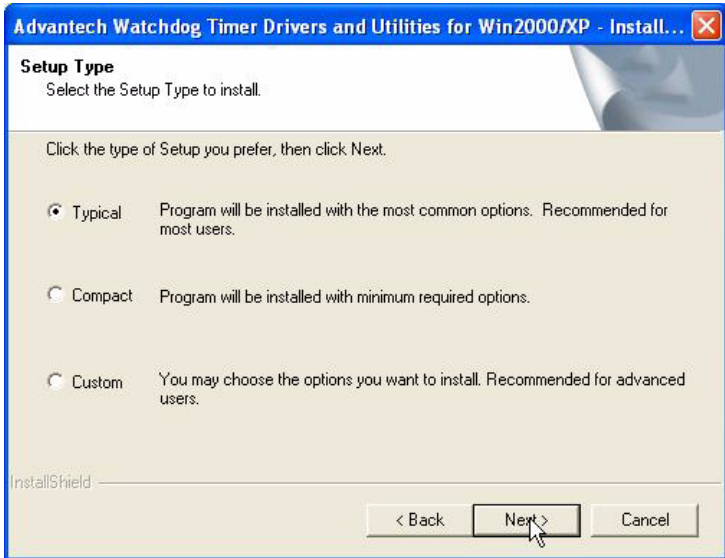
Step 4: Click Next to confirm the customer information.



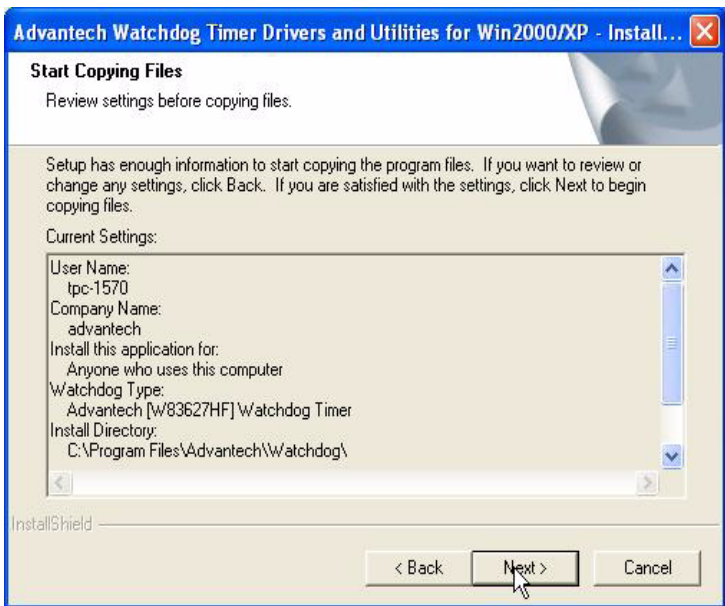
Step 5: Select Advantech [W83627HF] Watchdog Timer and click Next.



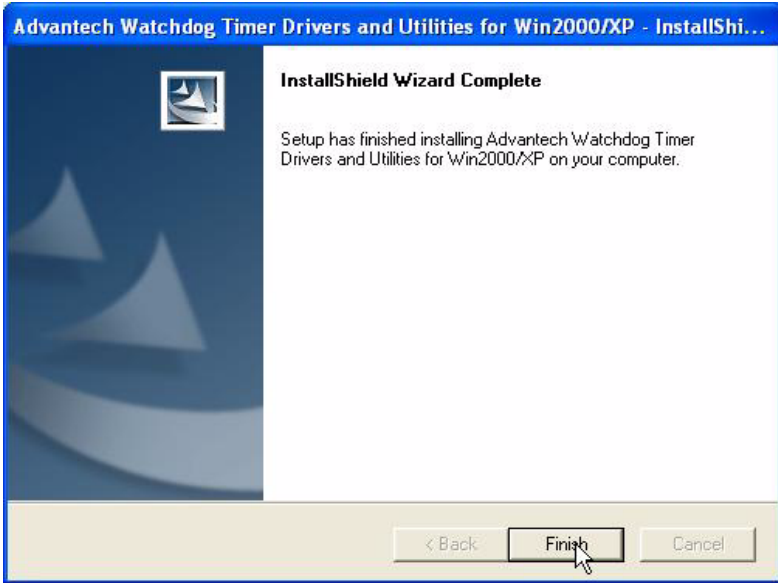
Step 6: Click Next to confirm selecting the Typical setup type.



Step 7: Click Next to proceed.



Step 8: Click Finish to complete the procedure.



Step 9: Click OK to restart the system and activate the Watchdog Timer.

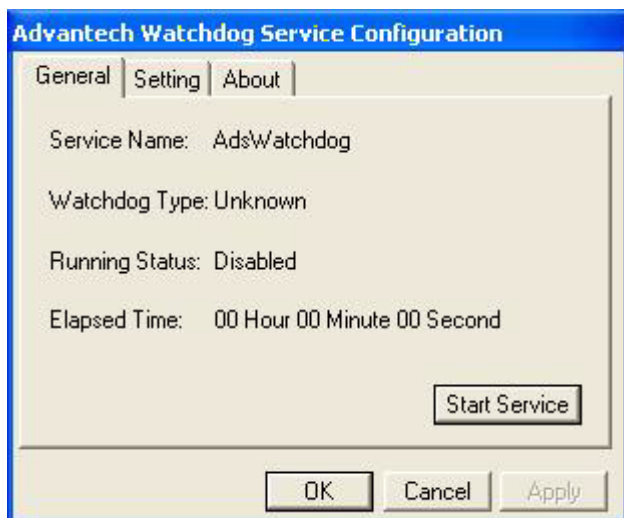


### 4.3.2 How to Use the TPC-1270 Watchdog Timer

Step 1: Open the Control Panel, click Watchdog Service Configuration.



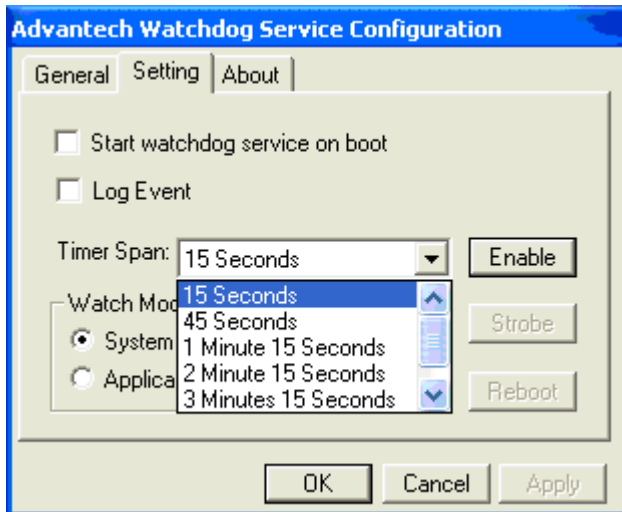
Step 2: Click the Start Service button.



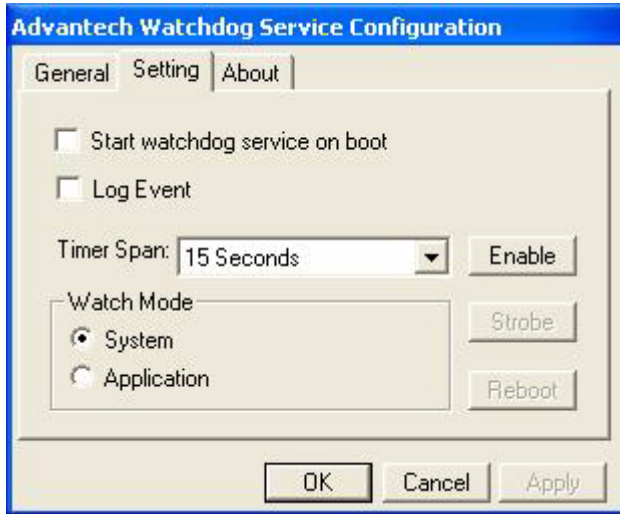
Step 3: Click Setting to select the setting page.



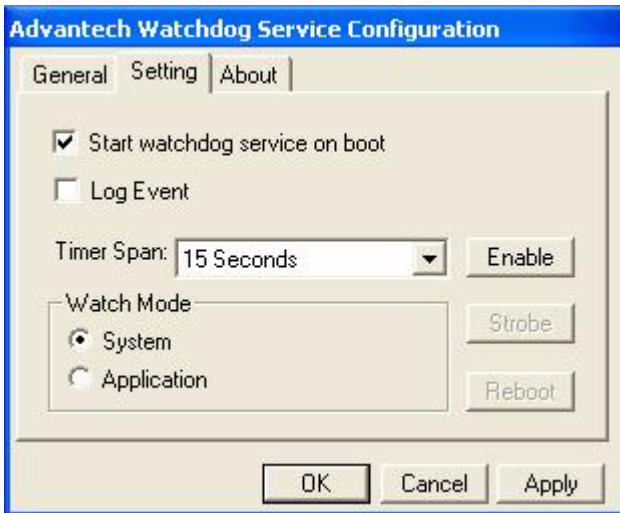
Step 4: Select the Timer Span that meets your application requirement.



Step 5: Click Enable to enable the setting.



Step 6: Check the Start watchdog service on boot to enable the Watchdog timer to start automatically after the system boots every time.



Step 7: Click OK, then the configuration procedure is finished.

<b>Note</b>	<i>Use Advantech WDT Driver. WDT was enable, and WDT LED was 1Hz glisten.</i>
-------------	-------------------------------------------------------------------------------

## Windows XP Embedded

Sections include:

- EWF
- HORM
- Advantech Utilities

# Chapter 5 Windows XP Embedded

TPC-1270 is in support of embedded windows platform. This section is to state the important features, EWF and HORN, provided in windows XP embedded.

## 5.1 EWF

---

EWF stands for Enhanced Write Filter. It provides an upper filter in the storage device driver stack that redirects disk write operations to volatile (RAM) or non-volatile (disk) storage. EWF protects a volume from write access. The benefits are as the following.

Write-protect one or more partitions on your system.

Enable read-only media, such as CD-ROM or flash, to boot and run.

Prolong the lifespan of write-sensitive storage, such as CompactFlash.

TPC-1270 XPE provides EWF RAM RDG mode on system partition. All write to system partition will be redirected to RMA once this mode is enabled. This mode is manually enabled by customers after they finish all their changes on system such as installing their applications or adjusting system setting.

Advantech provides a pair of utilities to operate EWF, OSLock and OSUnlock. The setting is stated in the section later.

## 5.2 HORM

---

HORM stands for Hibernate Once Resume Many. In HORM environment, a single hibernation file is used to boot the system repeatedly. To set a HORM environment, please follow the steps below.

Please make sure EWF is disabled. You can run OSUnlock to disable EWF.

Enable hibernation support:

Run 'power options' in control panel, and then select 'Enable Hibernation' in hibernation pane.



Enable EWF:

Run OSLock, and then system reboot automatically.

Open those software that customers want to directly use after system resume from hibernation.

Hibernate via Advantech HORM utility:

Please Click Start Menu->All Programs->Advantech->HORM

HORM environment remains all along unless the following events occur:

Run EWF commit command (ewfmgr c: -commit) and then reboot system.

Select “Discard hibernation file” by clicking F8 when system is starting up

Also, HORM cannot fit your system if free space in C partition is not enough. The hibernation file required is dependent on the RAM size you use on the system. In other words, the hibernation file is 512MB that is the same as memory size used on TPC-1270H-P1E or TPC-1270H-C1E.

## **5.3 Advantech Utilities**

---

TPC-1270 provides the useful utilities for users to configure the HORM and EWF.

### **5.3.1 Version Information**

Start menu-> All Programs -> Advantech

This states the current XPE runtime information including hardware platform, version, build number, release date, XPE QFEs installed in component database and XP Pro Patches you installed manually.

### **5.3.2 OSLock and OSUnLock**

The two utilities assist users to enable or disable EWF. Please go to Start Menu-> All Programs-> Advantech. The default setting of EWF is disabled. Users can protect C partition from any disk writing via OSLock that is to enable EWF RAM REG Mode. In this mode, any changes on C partition including modification on files or registry will be redirected to memory, thus these changes will be discarded in the next system startup.

To exit this environment is via OSUnLock. Please visit MSDN website for further information about EWF.

### **5.3.3 HORM**

This is to create HORM environment. Please go to Start Menu-> All Programs-> Advantech. This utility firstly dismounts all local physical volumes that are not protected by EWF. It requires users to input the volume list.

Please follow the steps before running this utility to create full HORM environment.

Enable Hibernation via Power Options in Control Panel

Make C: partition EWF-enabled via OSLock

Make sure that all volumes to be dismounted are not in use.

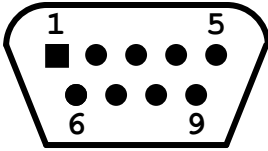
APPENDIX  
**A**

## **Serial Port Settings**

# Appendix A Serial Port Settings

## A.1 COM1/ COM2/ COM3 Connector Definition

---

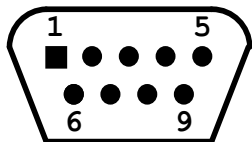


Pin	Signal
1	ND CD
2	NRX
3	NTX
4	NDTR
5	GND
6	NDSR
7	NRTS
8	NCTS
9	NRI

## A.2 COM4 Setting

---

The serial port COM4 on the TPC-1270 is adjustable. It can be set to RS-232, RS-422 or RS-485. This port is designed with auto data flow control capability. In other word, the TPC-1270 can automatically detect the data flow direction at this port when the two wired RS-485 communication is activated.



COM4 Mode	S1 and S2 setting
<b>RS232 Mode</b>	
<b>RS485 Mode</b>	
<b>RS422 Master Mode</b>	
<b>RS422 Slave Mode</b>	

PIN↵	RS-232↵	RS-422↵	RS-485↵	↵
1↵	NDCD↵	TX-↵	Data-↵	↵
2↵	NRX↵	TX+↵	Data+↵	↵
3↵	NTX↵	RX+↵	↵	↵
4↵	NDTR↵	RX-↵	↵	↵
5↵	GND↵	↵	↵	↵
6↵	NDSR↵	↵	↵	↵
7↵	NRTS↵	↵	↵	↵
8↵	NCTS↵	↵	↵	↵
9↵	NRI↵	↵	↵	↵

APPENDIX

# B

## **Watchdog Timer Programming**

# Appendix B WDT Programming

## B.1 Overview

---

The TPC-1270 cards' watchdog timer can be used to monitor system software operation and take corrective action if the software fails to function after the programmed period. This section describes the operation of the watchdog timer, and how to program it.

The watchdog timer is built into the super I/O controller W83627HF. It provides the following functions for user programming:

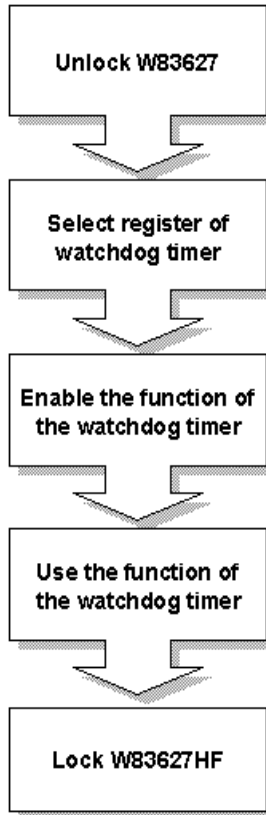
- Can be enabled and disabled by user's program.
- Timer can be set from 1 to 255 seconds or 1 to 255 minutes.
- Generates an interrupt or resets signal if the software fails to reset the timer after time-out.



## B.2 Watchdog Timer Programming

---

The I/O port address of the watchdog timer is 2E(hex) and 2F(hex), 2E(hex) is the address port. 2F(hex) is the data port. You must first assign the address of register by writing address value into address port 2E(hex), then write/read data to/from the assigned register through data port 2F(hex).



*Figure B.1: Watchdog timer programming procedure*

**Table B.1: Watchdog Timer Registers**

Address of register (2E)	Attribute	Description
Read/Write	Value (2F) and description	
87 (hex)	-----	Write this address to I/O address port 2E (hex) twice to unlock the W83627HF
07 (hex)	write	Write 08 (hex) to select register of watchdog timer.
30 (hex)	write	Write 01 (hex) to enable the function of the watchdog timer. Disabled is set as default.
F5 (hex)	write	Set seconds or minutes as units for the timer.
Write 0 to bit 3: set second as counting unit. [default]		
Write 1 to bit 3: set minute as counting unit		
F6 (hex)	write	0: stop timer [default]01~FF (hex): The amount of the count, in seconds or minutes, depends on the value set in register F5 (hex). This number decides how long the watchdog timer waits for strobe before generating an interrupt or reset signal. Writing a new value to this register can reset the timer to count with the new value.
F7 (hex)	rd/wr	Bit 6: Write 1 to enable keyboard to reset the timer, 0 to disable.[default] Bit 5: Write 1 to generate a timeout signal immediately and automatically return to 0. [default=0] Bit 4: Read status of watchdog timer, 1 means timer is "time out".
AA (hex)	-----	Write this address to I/O port 2E (hex) to lock the watchdog timer.2

## B.3 Example Programs

---

### 1. Enable watchdog timer and set 10 sec. as timeout interval

```
;-----  
Mov dx,2eh ; Unlock W83627HF  
Mov al,87h  
Out dx,al  
Out dx,al  
;-----  
Mov al,07h ; Select registers of watchdog timer  
Out dx,al  
Inc dx  
Mov al,08h  
Out dx,al  
;-----  
Dec dx ; Enable the function of watchdog timer  
Mov al,30h  
Out dx,al  
Inc dx  
Mov al,01h  
Out dx,al  
;-----  
Dec dx ; Set second as counting unit  
Mov al,0f5h  
Out dx,al  
Inc dx  
In al,dx  
And al,not 08h  
Out dx,al  
;-----  
Dec dx ; Set timeout interval as 10 seconds and start counting  
Mov al,0f6h
```

```
Out dx,al
Inc dx
Mov al,10
Out dx,al
;-----
Dec dx ; lock W83627HF
Mov al,0aah
Out dx,al
```

## **2. Enable watchdog timer and set 5 minutes as timeout interval**

```
;-----
Mov dx,2eh ; unlock W83627H
Mov al,87h
Out dx,al
Out dx,al
;-----
Mov al,07h ; Select registers of watchdog timer
Out dx,al
Inc dx
Mov al,08h
Out dx,al
;-----
Dec dx ; Enable the function of watchdog timer
Mov al,30h
Out dx,al
Inc dx
Mov al,01h
Out dx,al
;-----
Dec dx ; Set minute as counting unit
Mov al,0f5h
```

```

Out dx,al
Inc dx
In al,dx
Or al,08h
Out dx,al
;-----
Dec dx ; Set timeout interval as 5 minutes and start counting
Mov al,0f6h
Out dx,al
Inc dx
Mov al,5
Out dx,al
;-----
Dec dx ; lock W83627HF
Mov al,0aah
Out dx,al

```

### **3. Enable watchdog timer to be reset by mouse**

```

;-----
Mov dx,2eh ; unlock W83627H
Mov al,87h
Out dx,al
Out dx,al
;-----
Mov al,07h ; Select registers of watchdog timer
Out dx,al
Inc dx
Mov al,08h
Out dx,al
;-----
Dec dx ; Enable the function of watchdog timer

```

```

Mov al,30h
Out dx,al
Inc dx
Mov al,01h
Out dx,al
;-----
Dec dx ; Enable watchdog timer to be reset by mouse
Mov al,0f7h
Out dx,al
Inc dx
In al,dx
Or al,80h
Out dx,al
;-----
Dec dx ; lock W83627HF
Mov al,0aah
Out dx,al

```

#### **4. Enable watchdog timer to be reset by keyboard**

```

;-----
Mov dx,2eh ; unlock W83627H
Mov al,87h
Out dx,al
Out dx,al
;-----
Mov al,07h ; Select registers of watchdog timer
Out dx,al
Inc dx
Mov al,08h
Out dx,al
;-----

```

Dec dx ; Enable the function of watchdog timer

Mov al,30h

Out dx,al

Inc dx

Mov al,01h

Out dx,al

-----

Dec dx ; Enable watchdog timer to be strobed reset by keyboard

Mov al,0f7h

Out dx,al

Inc dx

In al,dx

Or al,40h

Out dx,al

-----

Dec dx ; lock W83627HF

Mov al,0aah

Out dx,al

## **5. Generate a time-out signal without timer counting**

-----

Mov dx,2eh ; unlock W83627H

Mov al,87h

Out dx,al

Out dx,al

-----

Mov al,07h ; Select registers of watchdog timer

Out dx,al

Inc dx

Mov al,08h

Out dx,al

```
;-----  
Dec dx ; Enable the function of watchdog timer  
Mov al,30h  
Out dx,al  
Inc dx  
Mov al,01h  
Out dx,al  
;-----  
Dec dx ; Generate a time-out signal  
Mov al,0f7h  
Out dx,al ;Write 1 to bit 5 of F7 register  
Inc dx  
In al,dx  
Or al,20h  
Out dx,al  
;-----  
Dec dx ; lock W83627HF  
Mov al,0aah  
Out dx,al
```



## **Accessory Kit Assembly**

This appendix shows how to connect to a CD-ROM via the CompactFlash slot.:

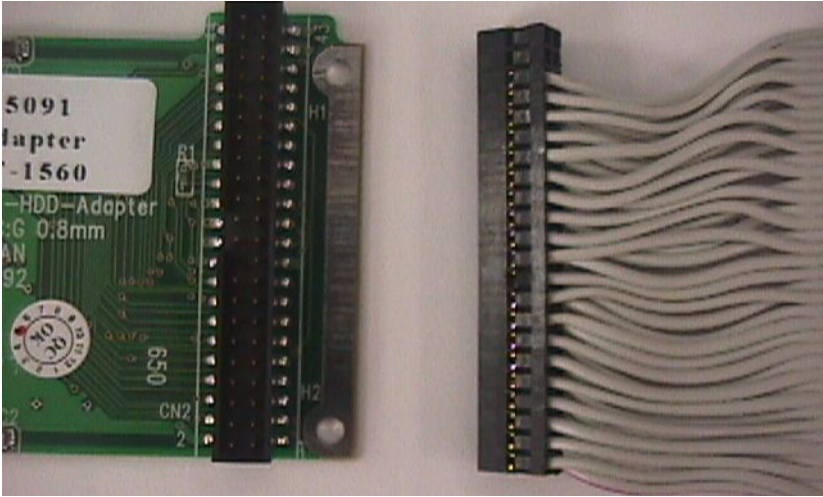
# Appendix C Accessory Kit Assembly

## C.1 CompactFlash to IDE Transfer Kit

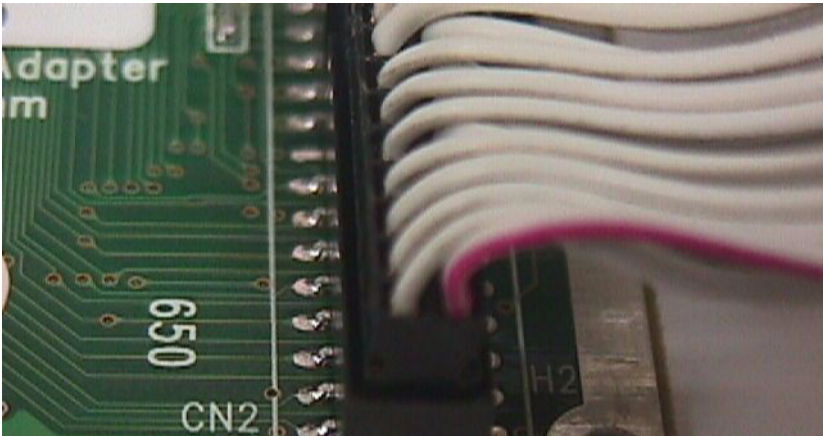
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Please follow this assembly procedure to use the CompactFlash slot to connect with a CD-ROM drive.

1. Connect the IDE cable to the adapter board.



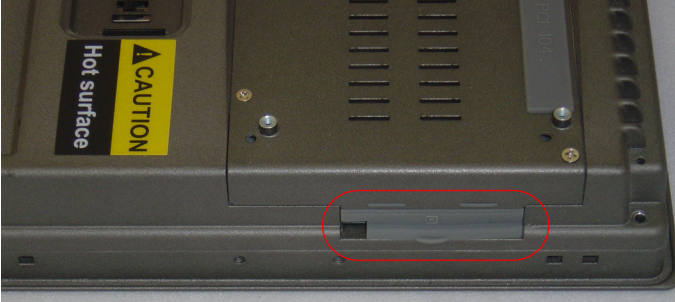
*Figure C.1: Adapter Board and IDE Cable*



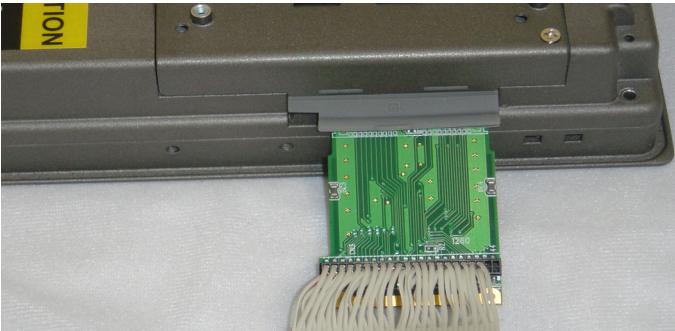
*Figure C.2: Connecting Adapter Board & IDE Cable*

Note            *Pin 1 is marked red*

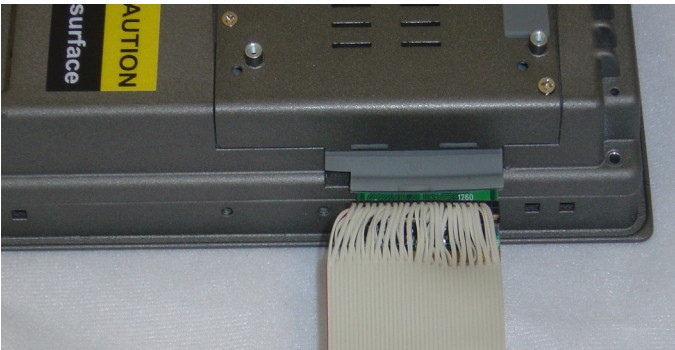
2.    Insert the adapter board into the CompactFlash slot.



**Figure C.3: CompactFlash Slot**

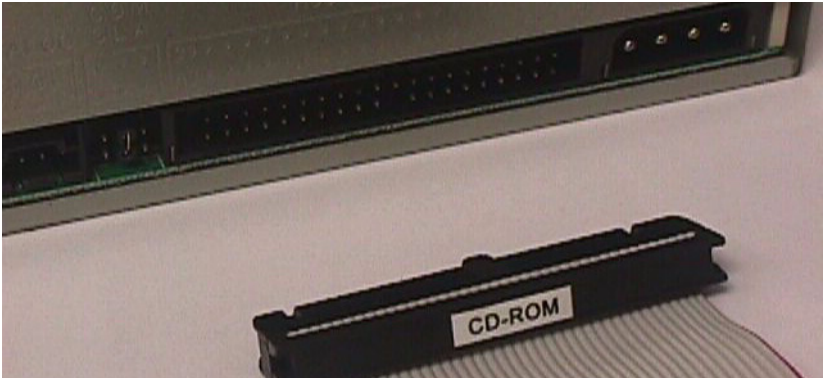


**Figure C.4: Insert the Adapter Board into the CF slot**



**Figure C.5: Inserted Adapter Board**

Connect the CD-ROM to the adapter board via the IDE cable and then connect the external power line to the CD-ROM.



*Figure C.6: Connect the CD-ROM via the IDE Cable*



*Figure C.7: Plug Power Line into CD-ROM Drive*

## **C.2 USB Driver Installation Notice**

---

It is required to install the service pack if you want to install the USB 2.0 driver on Windows XP

*Note*            *Service Pack 1 must be installed on Windows XP before you install the USB 2.0 driver.*

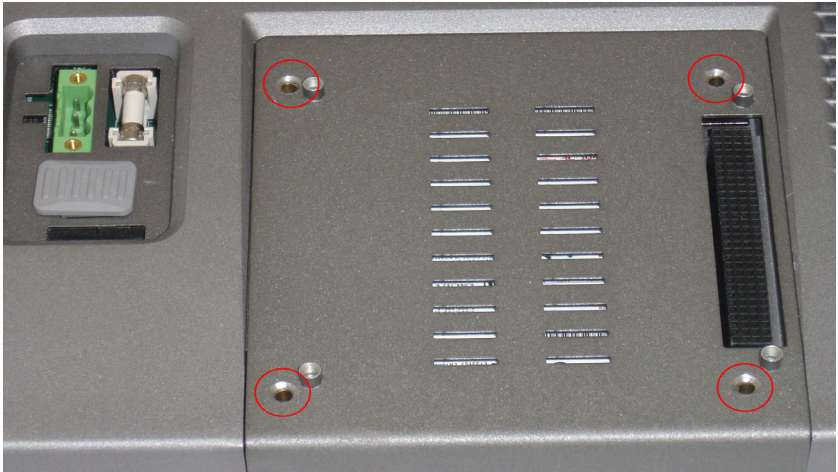
APPENDIX **D**

**HDD Kit Assembly**

# Appendix D HDD Kit Assembly

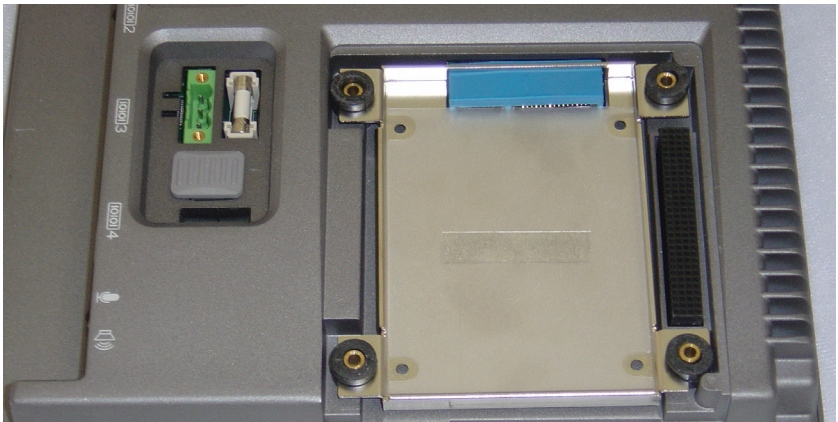
Please follow the assembly procedure to install the HDD into the system.

1. Remove the rear HDD cover.



*Figure D.1: Removing the Rear HDD Cover*

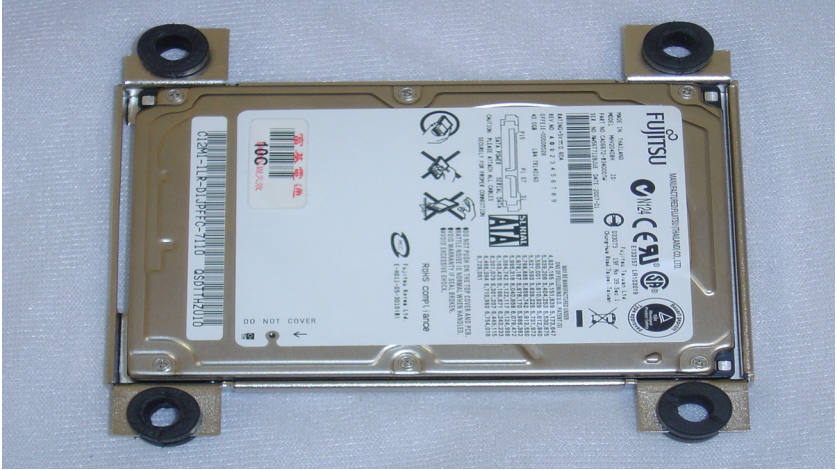
2. Deassemble the HDD kit from the system.



*Figure D.2: Removing the Top Screws*

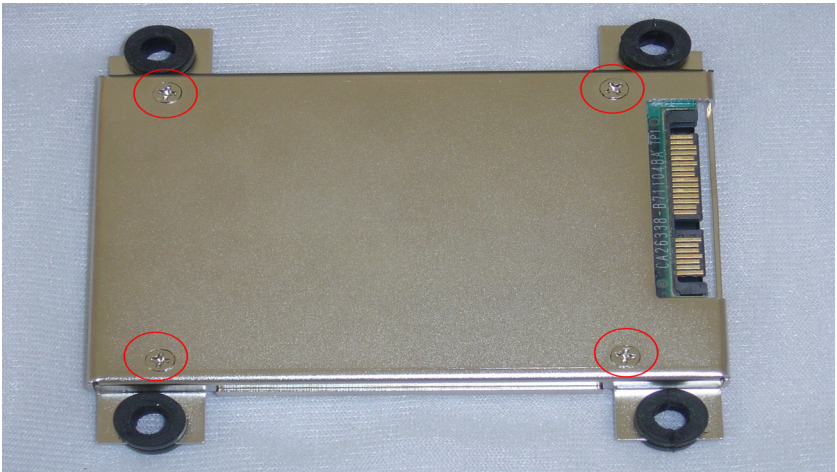


- Put the HDD into the HDD bracket and fasten the screws..



*Figure D.3: Installing the HDD*

- Put the HDD bracket into the HDD holder.



*Figure D.4: Installing the HDD Bracket*





## **Touchscreen Installation & Configuration**

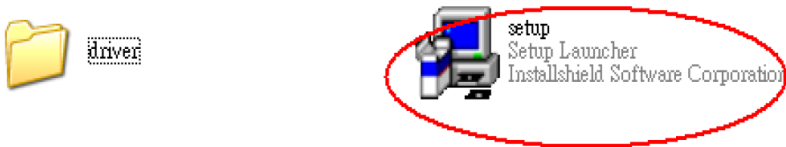
This appendix demonstrates how to install the PenMount 9000 touchscreen and set the configuration on TPC-1260. This section uses Windows XP as an example.

# Appendix E Touchscreen Installation & Configuration

## E.1 Driver Installation

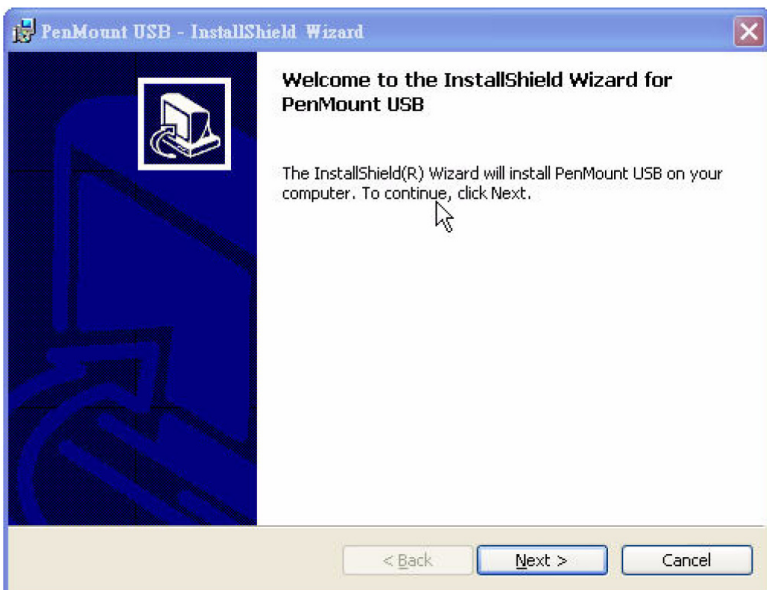
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Please insert the x86 TPC series support CD and go to the Windows 2000-XP driver folder (TPC-1270\Driver\Touch Screen\Driver\USB touchscreen). Click setup.exe

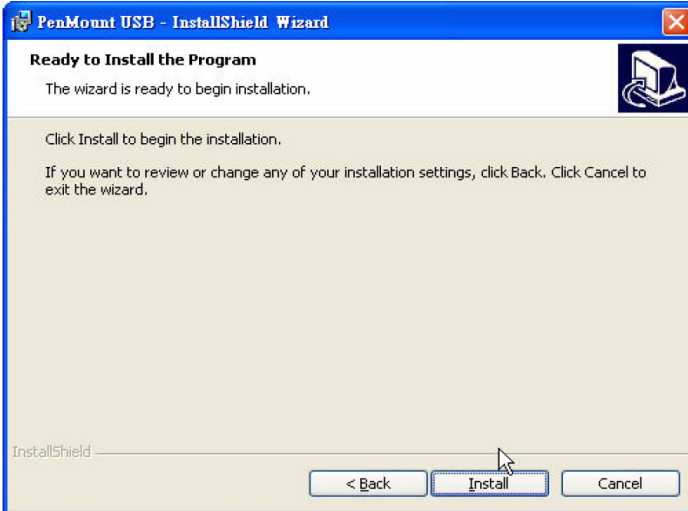


*Figure E.1: Setup.exe*

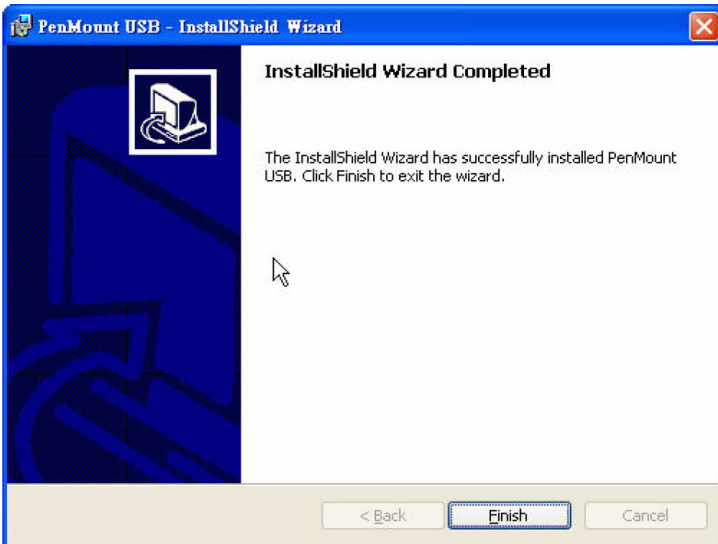
The screen displays the installation wizard for the PenMount software. Click “Next”. Follow the installation wizard step by step.



*Figure E.2: Install - Wizard*



*Figure E.3: Install – License Agreement*



*Figure E.4: Install – Completed*

## E.2 Uninstall the Driver

Please go to Settings and then select Control Panel. Please click Add/Remove Programs.

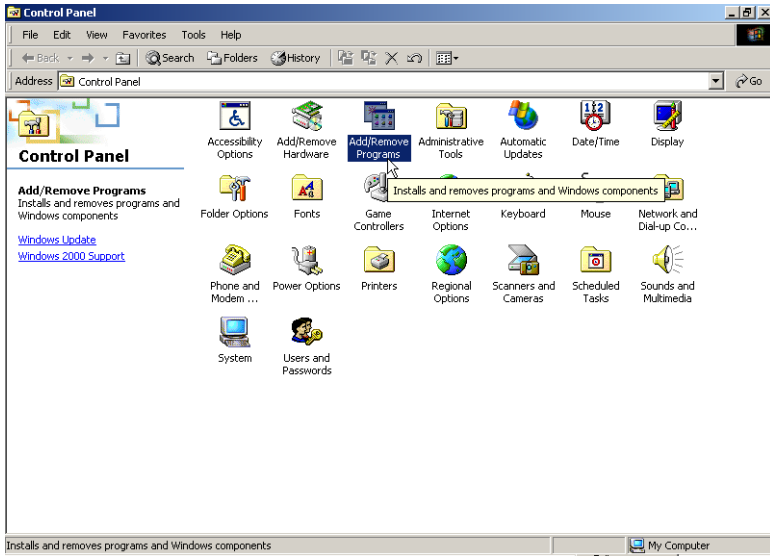


Figure E.5: Uninstall -1

Select PenMount USB. Click Remove button.

	Advantech ICOM Tools	大小	0.78MB
	Advantech PCI ICOM	大小	0.79MB
	Macromedia Shockwave Player	大小	9.42MB
	Microsoft .NET Framework 1.1		
	Microsoft .NET Framework 1.1 Chinese (Traditional) Lang. Pack	大小	2.85MB
	MSN Messenger 6.2	大小	5.79MB
	<b>PenMount USB</b>	大小	2.29MB
	點選這裡取得支援資訊	已使用	很少
	要從您的電腦移除這個程式，請按 [移除]。		<b>移除</b>
	Snagit 7	大小	17.17MB
	Windows HCT 11.2	大小	389.00MB
	WinRAR 壓縮工具	大小	3.04MB

Figure E.6: Uninstall -2

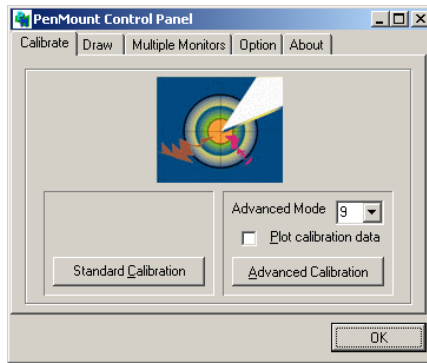
## E.3 Touchscreen Calibration

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The “PM”, the icon of the PenMount Control Panel, is in the menu bar after the touchscreen installation. Please click the icon “PM” to call PenMount Control Panel. It contains six functions: Calibrate, Draw, Multiple Monitors, Option, and About. Multiple Monitors is for multiple displays only; however TPC-1270 only provides one touchscreen display. This function is not workable on TPC-1270. About is to show the driver version.

### Calibrate

Two ways to calibrate the touch screen include “Standard Calibration” and “Advanced Calibration”. Standard Calibration is to adjust most touchscreens.



*Figure E.7: Standard Calibration -1*

Touch the red square.



***Figure E.8: Standard Calibration -2***

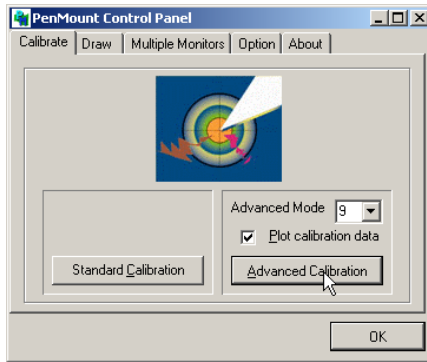
Touch the red square.



***Figure E.9: Standard Calibration -3***

*Note*                    *Touch the red squares in sequence. The calibration is completed after the fifth touch red point is calibrated. Press “ESC” to skip.*

Advanced Calibration is for the aged touchscreens by using 4, 9, 16 or 25 points to calibrate touch panel.

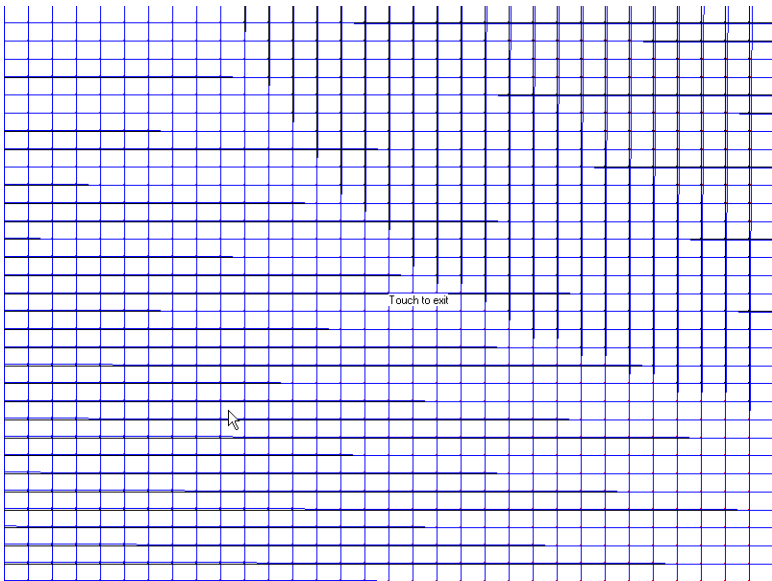


**Figure E.10: Advanced Calibration -1**

Touch the red square.



**Figure E.11: Advanced Calibration -2**



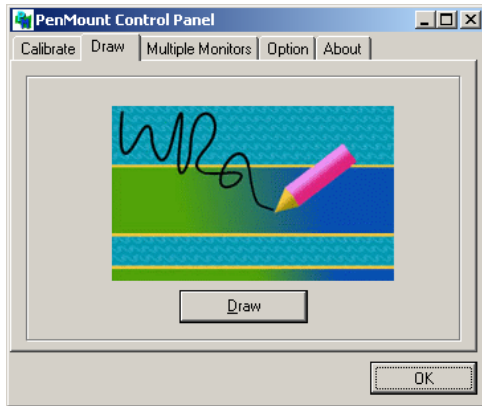
**Figure E.12: Plot Calibration Data**



*Note*                      *Plot Calibration Data enabled provides the blue lines to show linearity before calibration and black lines to show linearity after calibration when you finished the advanced calibration.*

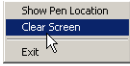
**Draw**

This is to test the touch screen operation. Its display shows touch location.



**Figure E.13: Draw**

Click “menu” and then click “clear screen” to clear the drawing.

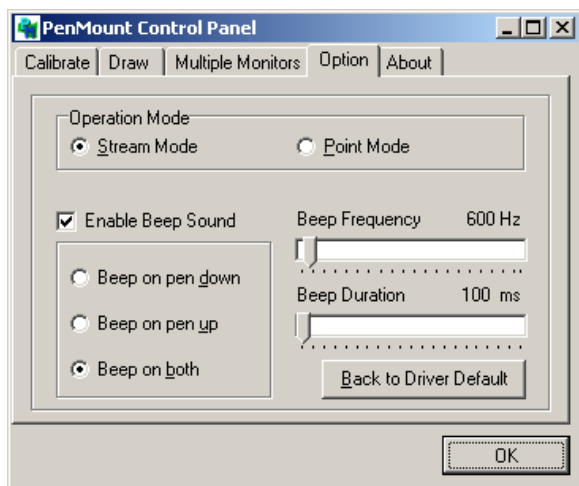


(5,17)  
(6,17)  
(6,18)  
(6,17)  
(23,32)  
(24,32)  
(24,33)  
(25,33)  
(25,34)  
(26,34)  
(25,34)  
(26,33)  
(27,33)  
(27,32)  
(26,32)  
(0,0)  
(0,1)  
(0,0)  
(1,0)  
(0,0)  
(1,0)  
(2,0)  
(2,1)  
(2,2)  
(2,3)  
(2,4)  
(2,6)  
(2,7)  
(2,9)  
(2,10)  
(2,12)  
(3,13)  
(2,14)  
(2,15)  
(3,15)  
(3,14)  
(4,15)  
(5,16)  
(4,16)  
(4,17)  
(5,17)  
(4,17)

*Figure E.14: Clear Screen*

## Option

This option is to set the operation mode and beep sounds if the beep sound is enabled. The operation mode, stream mode and point mode, is to enable/ disable the mouse's ability to drag on-screen icons. Stream mode let the mouse functions as normal and dragging on-screen. Point mode is only let the mouse a click function. The dragging on-screen is disabled. Users can turn on / off the beep sound by clicking the "enable beep sound".



*Figure E.15: Option*



APPENDIX

**F**

## **Fuse Specifications**

# Appendix F Fuse Specifications

## F.1 Fuse Specifications

**Rating:** 250VAC, 3.15Amp

**Size:** 5 x 20mm

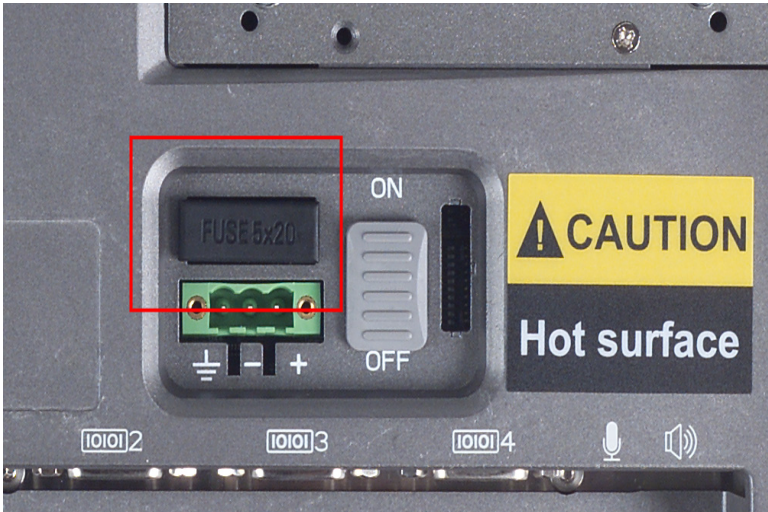
<i>Note</i>	<i>The fuse is set to break as the input voltage exceeds 33VDC for your protection.</i>
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## F.2 Fuse Replacement

Step 1: Remove the fuse cover

Step 2: Replace the damaged fuse with a new one

Step 3: Place the fuse cover back in position



*Figure F.1: Fuse Replacement*

<i>Warning</i>	<i>Do NOT replace the fuse unless it is damaged. Do NOT replace the fuse with a different rating.</i>
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