## **RP-7000C** User manual

RichPOS 7000C Series 15"/17" Fanless POS System

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## **Safety and Warranty**

- 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. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
- 4. For pluggable equipment, the power outlet must be installed 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 could 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 over-voltage.
- 12. Never pour any liquid into an opening. This could cause fire or electrical shock.
- 13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
- 14. If any 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 users 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 UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20° C (-4°F) OR ABOVE 60° C (140° F). IT MAY DAMAGE THE EQUIPMENT.

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## Chapter 1

## Introduction

## A Quick Tour of RP-7000C

Before you start, take a moment to become familiar with **RP-7000C**.



## **RP-7000C Dimension-15**"



## **RP-7000C Dimension-17**"





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### **Rear I/O Panel**



I/O Port	Connector Type	Description
2(010) <sup>1</sup> (1010)	COM1/COM2	Connect serial devices such as a serial printer or
	D-sub 9 connector	a fax/modem.
«	Line-Out	Connect the speakers to this port
× ×	Earphone Connector	
	Cash Drawer	Connect cash drawer, 12V actuation support
	RJ11 Connector	
贵	GigaLAN	Connect RP-7000C to the Ethernet
	RJ45 Connector	
÷	USBx4	Connect external USB devices
	USB Type A Connector	
4[0]0]	RJ45 Connector with LED Indicators (5V/12V)	Connect the VFD customer display or serve as an additional serial port (switching cable can be requested by order). (Green LED for 5V/ Orange LED for 12V/ None for RI.)
DC+12V	DC-in	Connect the 12V DC adaptor
	Power Connector	

#### **Packing List**

- RP-7000C system unit x 1
- 150W Power Adapter x 1
- Driver & Manual CD x 1
- AC Power Cord x 1
- RAM Heat-sink Module
  - (for RAM height = 30mm type only)

#### **Optional:**

- Identification Module (MSR/ RFID/ IC Card Reader/ Fingerprint Selectable)
- Wireless LAN Module

Chapter 2

## Hardware Installation and Upgrading



Do not remove the rear cover until you have verified that no power is flowing within the system. Power must be switched off and the power cord must be unplugged. Every time you service the system, you should be aware of this.

### 2.5" Hard Disk / SSD Drive Installation

- 1. Turn off power and remove power cord from the system
- 2. Remove 4 screws and slightly separate the LCD front frame from the rear housing.



3. Use the 4 screws provided to mount the HDD into the brackets and connect the SATA cable to the HDD.





4. Re-install the LCD front frame onto rear housing.

Note: If the HDD does not work normally, please refer to troubleshooting

#### **Jumper Setting Adjustment & Memory Installation**

- 1. Turn off the system power.
- 2. Remove 4 screws and slightly separate the LCD front frame from the rear housing.



3. Remove the LCD front frame, you may access the RAM sockets and COM port jumpers.

## COM ports jumper setting:

Please reference to Motherboard FEB-9457 manual chapter 1 for detail information.



#### **RAM installation:**

When RAM x 2 are applied, the upper RAM is recommended to be installed with the RAM heat-sink.



#### Re-install the LCD front frame onto rear housing.

### **MCR Parameter Modification**

This option is for users who need to customize the MCR configurations for a particular task. To enter the Configuration Mode, please execute text editor program (such as Microsoft Word, Notepad...etc.) first, and then press [Ctrl] + [Alt] + [F10]. The following menu will appear accordingly.

\*\*\*\* CONFIGURATION MODE \*\*\*\* 1:SET INTERFACE 2:SET MAGNETIC STRING 3:SET STRING EDITING 4:SET BUZZER 5:RESET TO DEFAULT 6:SHOW STATUS 7:SET KEYBOARD CONFIGURATION 0:EXIT SETUP MODE

For detailed instruction, please refer to the MSR212 Programmer's Manual under the path below in the driver CD: \Utility\MCR\MCR util\Uniform\MSR212(Uniform) USER MANUAL(ENGLISH)

### **Cash Drawer Installation**

Before connecting the cash drawer to the **RP-7000C**, please make sure the drive voltage and cable pin assignment of the cash drawer matches the definition of the cash drawer port of **RP-7000C**. Please refer to the mother board manual GPIO part for more information.

Plug cash drawer cable into the cash drawer port.



Note: If the cash drawer cannot be detected by the system, please refer to troubleshooting.

Up to two cash drawers may be driven from this port. Driving voltage of the solenoid is DC+12V. I/O port 2F is used for drawer operation. A test program is supplied, for Linux and Windows, source code of which is available on request by software developers. OPOS driver, test software and sample dll files can be found under the Utility folder in the system driver CD attached

(DLL Library: Utilities\Cash Drawer\cashdrawerdll\ Test Program: \Utilities\Cash Drawer\cashdrawertest\)

To test for drawer open, read port **2F**, if bit 0=1 then drawer is open, if bit 0=0 drawer is closed. Before testing the cash drawer function, ensure to initiate the GPIO port first referring to the command sets below:

#### initGPIO=2e,87,2e,87,2e,07,2f,07,2e,f1

( 2e stands for the address while '87', '07', 'f1' stands for the value to the address. All the values here are hexadecimal.)

## Chapter 3

## Software Installation and Setup

#### **Driver Installation**

RP-7000C comes with a variety of drivers for different operating systems.

You will find the CD with RP-7000C which has all necessary drivers for this system.

#### Please follow this installation sequence.

Driver installation sequence:

Chipset Driver -> VGA Driver -> LAN Driver -> Audio Driver -> Touch Tools

The reason to follow our sequence is that IRQ settings will be changed by Windows 2000 and XP to non supported values, and you may encounter unnecessary problems later.

#### **Intel Chipset Driver Installation**

- 1. Insert the CD into your CD ROM Drive.
- 2. Locate the folder of D:\Driver\Chipset\XP2KVISTA
- 3. Open Setup.exe



#### 4. Click Next.



5. Read the License Agreement and click Yes.



6. Click Next and the drivers for the Intel Chip set will install.



7. Please wait while the setup program processing.



8. When the 'Setup COMPLETE' message appears click Finish to restart your computer.

### **VGA Driver Installation**

## 945GME driver installation for Windows XP

- 1. Locate the folder of D:\Driver\VGA\XP2K
- 2. Open winxp\_14324.exe

🕅 Intel(R) Chipset Graphics Driver Software - InstallShield Wizard		×
<pre>************************************</pre>		
* NOTE: This document refers to systems containing the * following Intel(R) chipsets:	~	
< Back Next > Ca	ncel	

1. Select Next to continue.



#### 2. Select Next to continue.



3. Read the License Agreement and click Yes.

tel® Gra	phics Me	dia Acceler	ator Drive	r		
[ntel@ Readmo	<b>Grap</b> File I	ohics Me	dia Aco 1	elerato	r Driver	intel
Refer to th	e Readme *****	file below to vi	ew the syste	em requirement	s and installation	information.
* * * Pro	ductio	n Version	Release	3		
* Mic * Mic	rosoft rosoft	Vindows* Vindows*	2000 XP			
				< Back	Next >	Cancel

4. Click Next to see the setup progress.



5. Select Next to continue.



6. Click Finish to complete the installation procedure and restart the system.

## **LAN Driver Installation**

### LAN Driver Installation for Windows XP

- 1. Locate D:\Driver\LAN\XP2K\
- 2. Double click Setup.exe.



#### 3. Click Next to continue

REALTEK GDE & FE Ethernet Ready to Install the Program The wizard is ready to begin ins	PCI-E NIC Driver - InstallShield Wizard
	Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield	K Back Install Cancel

#### 4. Click Next to continue

REALTEK GbE & FE Ethernet	PCI-E NIC Driver - InstallShield Wizard	×
Setup Status		
	The InstallShield Wizard is installing REALTEK GbE & FE Ethernet PCI-E NIC Driver	
		ß
	Install Driver	
InstallShield	Canc	e

5. Please wait while processing.

REALTEK GbE & FE Ethernet	PCI-E NIC Driver - InstallShield Wizard InstallShield Wizard Complete
	The InstallShield Wizard has successfully installed REALTEK GbE & FE Ethernet PCI-E NIC Driver. Click Finish to exit the wizard.
InstallShield	K Back. Finish Cancel

6. Click Finish to complete the installation procedure.

### **Audio Driver Installation**

### Audio Driver Installation for Windows XP

- 1. Locate D:\Driver\Audio\XP2K\
- 2. Double click Setup.exe.

Realtek High Definition Au	dia Driver Setup (2.64) R2.07	
	Welcome to the InstallShield Wizard for Realisk High Definition Audio Driver The InstallShield Wizard will install Realisk High Definition Audio Driver on your computer. To continue, click Neut	
(instell State)	<gad. next=""> D</gad.>	

3. Click Next to continue.

Found New Hardware Wizard		
	Welcome to the Found New Hardware Wizard Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission). Read our privacy policy	
	Can Windows connect to Windows Update to search for software? Yes, this time only Yes, now and every time I connect a device No, not this time	
	Click Next to continue.	
	< Back Next > Cancel	

4. Click Next to continue.



5. Click Finish and restart the system.

### **ELO Touch Tools Installation**

### **ELO Touch Tools Installation for Windows XP**

- 1. Locate D:\Utility\Touch Screen\ELO Touch\XP\_Vista
- 2. Open SW600650.exe

WinZip Self-Extractor
Welcome to Elo Universal Driver for Windows XP/Windows Vista Installer.
Driver Version 4.8.1 (08-20-2008)
Click OK to continue.
OK

3. Click **OK** to continue.



4. Click **Unzip** to continue the installation.



5. Click **OK** to continue.

Elo Touchscreen Setup (V	ersion 4.8.1.0)
	Pick the default language for the Elo Touchscreen Universal Driver package. All Elo touchscreen applications will be displayed in the language selected below.
	Default
	Next > Cancel

6. Pick the default language for the Elo Touchscreen and click **Next** to continue.

Elo Touchscreen Setup (V	ersion 4.8.1.0)
ēln	Welcome to Elo Touchscreen Setup. This program will install the Elo Serial and USB touchscreen drivers on your computer. It is strongly recommended that you exit all Windows programs before running this Setup program.
TOUCHSYSTEMS	Choose Enable PreCalibration to store calibration data in touch-monitors  I Install Serial Touchscreen Drivers  I Install USB Touchscreen Drivers  Enable PreCalibration
	< Back Next > Cancel

7. Check "Install serial Touchscreen Drivers" And click Next.

he rest of the ag	reement.			
End-User L	icense Agre	ement		
BY DOWNLOAD ARE AGREEID AGREEMENT, AND LIMITED	DING AND/OR NG TO BECOM INCLUDING D WARRANTY.	INSTALLING E BOUND BY THIS SOFTWA	THE SOFTWA THE TERMS O ARE PRODUCT	RE YOU F THIS LICENSE
IMPORTANT   End-User L	READ CAREFU icense Agre	LLY: This H ement ("EUL (either an	(lo TouchSys .k") is a le individual	gal or a
o you accept the ot have full toud	terms of the prec monitor functiona	eding license agre lity and setup will	eement? If you cho close. To have ful	ose No, you w functionality

8. Read the "License Agreement" and click Yes if you accept it.

Elo Touchscreen Setup (Vo	Ersion 4.8.1.0)  Select the COM ports to use with Elo serial touchscreens. Check the Auto-detection box if you want Setup to auto-detect COM ports currently connected to Elo devices.  During Auto-detection, Setup will send data to each port which may temporarily interfere with some types of serial devices.  Click Next to continue.  Auto-detect Elo touchscreens.
	< Back Next > Cancel

9. Select "Auto-detect Elo touchscreens" and click Next.

	Choose the COM ports from the list below to use with your touchmonitors. All COM ports reported by your system are listed.
TOUCHSYSTEMS	COM1 COM2 ✔ COM3 COM4 COM5 COM5
	Once you have selected a COM port, click Next to continue the installation.

10. Select the COM port for the touch monitor. It is recommended that you select **COM3** for the touch screen, as this port is internally configured for touch operation. And click **Next** to continue.

Elo Touchscreen Setup (Ve	rsion 4.8.1.0)	X
<b>BO</b> TOUCHSYSTEMS	You have selected the COM ports listed below to use with your touchmonitor.	
AAN	Click Next to complete the installation or click Back to change your selections.	

11. Make sure the COM port listed is the one you chose for your touch monitor. Press **Next** to continue.

Elo Touchscreen Setup (Version 4.8.1.	0)
	Elo Touchscreen drivers and components

12. Wait until the ELO Touch Tools installation finished.

Elo Touchscreen Setup	(Version 4.8.1.0)
<b>BIO</b> TOUCHSYSTEMS	Setup Complete Setup has finished installing the Elo touchscreen drivers and components. You can choose to calbrate your Elo Touchscreen monitors after setup finishes.
(ITHID	Calibrate Elo Touchscreen monitors.
ART	Click Finish to exit Setup.
	<back finish<="" td=""></back>

13. Select "Calibrate ELO Touchscreen monitors" and click Finish.

۲	<b>b</b>

14. Start calibrating the touchscreen by touch the targets showed on the screen.



15. If the cursor is working fine, click it to finish the setting; if not, click it to calibrate the screen again.

## IT MAY BE NECESSARY TO RESTART YOUR COMPUTER TO UTILIZE YOUR TOUCHSCREEN FEATURES.



16. Click Restart to reboot your computer again.

## **ELO Control Panel**

This section explains the different options in the ELO control Panel.

#### General tab

The general tab allows you to:

- Change the COM port your touch screen is set to.
- Calibrate the touch screen with the Align button.



#### Mode tab

The Buttons tab allows you to:

- Adjust all mouse emulation controls.
- Change cursor properties
- Enable or disable right mouse button utility.



#### Sound tab

The Sound tab allows you to:

• To change sound properties for ELO touch tools.

lo Touchscreen Properties	7
General Mode Sound Properties 1 About	
Sound	_
P Beep on touch	
Low Tone High	
↓ 韓  -) 韓	
Short Duration Long	
Touch here to test beep sound	
	Helto
	1.50

#### Properties tab

The Diagnostics tab allows you to:

• View Controller Information.



#### About tab

The About tab displays Information about ELO Touch systems



### **TouchKit Tools Installation**

### Fujitsu TouchKit Installation for Windows XP

- 1. Locate D:\Utility\TouchScreen\TouchKit(Fujitsu)\Windows 2000 XP\
- 2. Select the relevant folder for the operating system that you are using.
- 3. Open Setup.exe



4. Click Next



#### 5. Click Next



6. Click Next



7. Click OK to close the pop-up dialog.



8. Click "Support Multi-Monitor System" and then Next to continue.

TouchKit		8
Choose Destination Locate Select folder where setup will in	n etad Mes.	TouchKit
	Seize will leated Touchi's in the lokaeing folder To install to this folder, slick Need. To install to a folder.	different kolder, click Browow and celect, another
	Destination Folder D. Program Riech Touch Ca	( Bjoese ;
(Second	C Back Beet >	Cancel

9. Click Next



10. Click Next

louchKil		×
Selup Status	Tou	ehkit
	Touch Kit is configuring your new software installation	
	Information     Touch Controller Pound in COM3. Add the controller now ?     Yes      No	
		lancel

#### 11. Click Yes



**12.** Click **OK** and turn off the computer to restart your system again.

After the system finish rebooting follow the directions to calibrate the Touch screen.

## **TouchKit Control Panel**

This section explains the different options in the TouchKit control Panel.

#### General tab

#### The general tab allows you to:

• Manage the touch screen controller you installed.

💐 Touchkit : Ser	al Controlle	r		X
Edge Compen General	sation   Setting	Hardwa   To	re   ols	About Display
Installed Touch Serial Controller	screen Controll	ers		
		Add	B	emove
		ок	Cancel	Apply

#### Tools tab

The tools tab allows you to:

• Calibrate the touch screen with the **4 Points Calibration** button.

General	Hardware Setting Tools	About Display
inearization Curve		1
4 Points Calibration	Do 4 points alignment to n	natch display.
Clear and Calibrate	Clear linearization paramet alignment.	ter and do 4 points
	Do 9 points linearization fo	or better touchscreer
Linearization	linearity.	

## Wireless LAN Driver Installation

- 1. Locate D:\Utility\Wireless Lan\Ralink
- 2. Open RALINK(3.0.7.0).exe



3. Click "Next" and start the installation



4. Select "Ralink Configuration Tool" and click Next to continue.



5. Select "Optimize for WiFi mode" and click Next to continue.



6. Click Install to continue.



#### 7. Wait while the installation is processing.

Ralink Wireless LAN - InstallShield Wizard		
	InstallShield Wizard Complete The InstallShield Wizard has successfully installed Ralink Wireless LAN. Click Finish to exit the	
Ralink	wizard.	
InstallShield	< Back Finish Cancel	

8. Click "Finish" to complete the installation.

## Chapter 4

## **Specifications**

## **RP-7000C Specifications**

System Configuration		
CPU (BGA)	INTEL ATOM N270 (1.6GHz with 512K L2 cache)	
Chipset	INTEL 945GME	
South Bridge	INTEL ICH7-M	
Memory	Two 200-pin SODIMM support DDRII SDRAM up to 4GB	
VGA controller	GMA950 Integrated in 945GME, shares system memory up to 224MB	
Primary LCD Panel	17"/15" TFT LCD Panel (800X600/1024x768)	
Primary Touch Panel	17" with 5 wire resistive touch (RS-232 interface) 15" with 4 or 5 wire resistive touch panel (RS-232 interace)	
Storage	Internal 2.5" SATA hard disk drive or 2.5" SATA SSD	
Power	12VDC-150 watt external power adapter	
I/O Port		
Serial Port	<ul> <li>3 User available COM ports (COM1 / 2 / 4)</li> <li>Ø D-SUB9 (RS-232): COM1 and COM2</li> <li>Ø RJ-45 (VFD or RS-232): COM4 for VFD or RS-232 device. (LED Indicators: Green for 5V / Orange for 12V / Non for RI)</li> <li>1 System assigned COM port (COM3)</li> <li>Ø COM3: for primary touch screen</li> </ul>	
USB port	8 USB 2.0 ports (4*Internal, 4*External)	
Cash drawer port	RJ11 Cash drawer port,12V actuation. Controlled through GPIO port 2F	

LAN Port	10/100/1000Mbps Ethernet Controller, Realtek RTL8111C	
Audio Port	Integrated Sound Blaster compatible, AC97 Audio Codec. (Realtek ALC662)/Built-in stereo speakers	
Optional Features		
MSR	External Magnetic Stripe Card Reader track 1/2/3	
Identification Device	External Finger Print Receiver or RFID receiver(USB)	
Wireless	Internal Wireless Module(USB)	
Power Consumption		
Power consumption	60W Idle (Standard system with secondary LCD panel while accessing HDD).	
Operating temperature		
Operating temperature	$0^{0}$ C ~ $40^{0}$ C	

## Chapter 5

## **Troubleshooting**

**Please note that the following troubleshooting guide is designed for people with strong computer hardware knowledge such as System Administrators and Engineers.** 

#### Power is on, but there is no Panel Display

- A) Check if the motherboard Power LED is on when the power adapter is connected properly.
- **B)** If the LCD backlight is on but no content showed on the screen, please make sure the SATA cable is properly connected to the HDD.
- C) Reset CMOS DATA by shorting motherboard JCMOS PIN2 and PIN3 for a few seconds (Please refer to **page 10** in the **FEB-9457** User's Manual).
- D) Check if the system is beeping.
  - **D-1)** A single long beep indicates that a DRAM error has occurred. Please make sure the DRAM is properly installed, or please replace the DRAM.
  - **D-2)** One short beep after power on means the system works normally, but the LCD panel or LVDS interface could be defective.
    - D-2-1) The Boot Display setting in COMS setup should be set to [CRT+LFP1].
    - D-2-2) LVDS board connection to motherboard LVDS1 could be defective..
    - D-2-3) The LCD cable could be defective.
    - D-2-4) The Inverter is not working.
    - **D-2-5)** The LCD panel could be defective.

#### To check where the problem could be:

Please connect a VGA monitor to the VGA port. If the VGA monitor displays normally, one of the problems above is occurring, otherwise the motherboard may not function properly.

#### **Cannot Detect HDD**

- A) Check if the SATA cable is connected properly to the motherboard SATA Connector or it could be defective.
- B) Check CMOS setup, and set SATA HDD to [Auto].
- **C)** On-board SATA port could be defective.

#### **Touch Panel Does Not Work**

- A) Check CMOS settings, COM3 needs to be "Enabled". The correct settings are "3E8h" and "IRQ10".
- B) Check if there are any conflicts between COM3 IRQ10 and other devices.
- **C)** Check if the ELO driver or the TouchKit driver has been properly installed. Or try to reinstall the driver (Please refer to the ELO driver installation or the TouchKit part).
- D) Check if the ELO controller or the TouchKit driver on COM3 has been detected during the ELO driver or the TouchKit driver installation. If yes, then check whether the flat cable from the ELO touch screen or the TOUCHKIT touch screen has been properly connected to the ELO controller or the TouchKit controller (Attention: Pin1 mark should be on the same side as the ELO controller).
- **E)** Check if the ELO controller or the TouchKit controller Green LED is blinking.

If not, there is no DC+5V support for the ELO controller or the TouchKit controller from the motherboard.

- E-1) Check if the COM3 cable is properly connected between the motherboard and the Touch screen controller.
- **F)** Touch screen controller could be defective or the touch panel could be defective.

#### **Touch Panel Cannot Calibrate Correctly**

- A) Please replace the touch controller, and re-calibrate. If this works, change back to the original touch controller, and re-calibrate.
- **B)** If the touch panel still cannot calibrate correctly after changing to a new touch controller, the touch panel may not be installed properly or it could be defective.

#### MCR Is Not Functioning Properly

- A) Check if the green MCR LED is on.
  - A-1) Check if the MCR is properly connected to the MCR connector board on main system.
  - A-2) Make sure the MSR cable is properly connected between RG9000CB0880 I/O board MSR1 and the MCR connector board.
  - A-3) The MCR connector board could be defective.
  - A-4) The MCR module could be defective.

### LAN Is Not Functioning Properly

- A) Check if the LAN driver is installed properly. (Please refer to the LAN driver installation)
- B) Check if there are any IP Address conflicts.
- C) Check if the RJ45 cable is properly connected.
- D) The on board LAN chip could be defective.

#### **COM1 and COM2 Are Not Functioning Properly**

- A) Check if the I/O ports are enabled in the CMOS setup.
- B) Check if there are any IRQ conflicts.
- C) The motherboard could be defective.

#### **Cash Drawer Port Is Not Functioning Properly**

- A) Make sure the pin assignment matches between the cash drawer and the RJ11 cash drawer port.
- B) Verify the GPIO port address and the bit is "2F". Check other details from the system manual page 10 and FEB-9457 User's Manual page 50.
- **C)** The motherboard could be defective.

#### USB device is not functioning properly

- A) Ensure that the USB controller is "enabled" in the CMOS setup.
- **B)** Ensure that the USB Legacy is "enabled" in the CMOS setup. (Windows 98 · Windows 2000 · Window XP Professional)
- C) Ensure that the USB Legacy is "Disabled" in the CMOS setup. (Embedded OS: Windows XP Embedded \circ Window CE. NET \circ Linux RedHat 9)