

Flex PC BOX Software Mirroring Utility for Flex PC BOX

User Manual

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www.schneider-electric.com



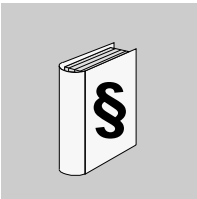
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Safety Information



Important Information

NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a Danger or Warning safety label indicates that an electrical hazard exists, which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **will result in death or serious injury**.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **can result in death or serious injury**.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **can result in minor or moderate injury**.

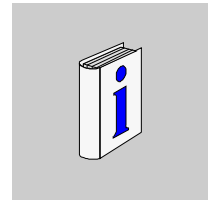
CAUTION

CAUTION, used without the safety alert symbol, indicates a potentially hazardous situation which, if not avoided, **can result in equipment damage**.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

About the Book



At a Glance

Document Scope This manual describes the Software Mirroring Utility used for the Flex PC BOX from the Magelis industrial PC range.

The RAID option represents a separate accessory in the FLEX PC BOX range.

The product reference is: MPCYN00RAID0N

Validity Note

General

The present documentation is intended for qualified technical personnel responsible for the implementation, operation and maintenance of the products described. It contains information necessary for the proper use of the products. However, those who wish to make a more "advanced" use of our products may find it necessary to consult our nearest distributor in order to obtain additional information.

The contents of this documentation are not contractual and in no way constitute an extension to, or restriction of, the contractual warranty clauses.

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Intel®, Celeron®, and Pentium® are registered trademarks of Intel Corporation.

IBM® is a registered trademark of International Business Machines Corporation.

Related Documents

You can download these technical publications and other technical information from our website at www.schneider-electric.com.

Title of Documentation	Reference Number
Installation Guide for Magelis Industrial PC and Terminals	35012221
Vijeo Designer Tutorial	35007035
NEMA ICS 1.1	—
Magelis Industrial PC and Terminals - Readme	35012220

Product Related Information

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both the Flex PC BOX unit and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the Flex PC BOX. The AC unit is designed to use 100 ... 240 Vac input. The DC unit is designed to use 23 ... 25 Vdc. Always check whether your device is AC or DC powered before applying power.

Failure to follow these instructions will result in death or serious injury.

DANGER

EXPLOSION HAZARD

- Always confirm the UL 1604 hazardous location rating of your device before installing or using it in a hazardous location.
- To apply or remove the supply power from a Flex PC BOX device installed in a Class I, Division 2 hazardous location, you must either:
 - Use a switch located outside the hazardous environment, or;
 - Use a switch certified for Class I, Division 1 operation inside the hazardous area.
- Do not connect or disconnect any cables or wires while the circuit is live unless the area is known to be free of ignitable concentrations of vapors, gases, and other flammable or combustible materials. This applies to all connections including power, ground, serial, parallel, and network connections.
- Never use unshielded / ungrounded cables in hazardous locations.
- Use only non-incendiary USB devices.
- When enclosed, keep enclosure doors and openings closed at all times to avoid the accumulation of foreign matter inside the workstation.

Failure to follow these instructions will result in death or serious injury.

WARNING

LOSS OF CONTROL

- The designer of any control scheme must consider the potential failure modes of control paths and, for certain critical control functions, provide a means to achieve a safe state during and after a path failure. Examples of critical control functions are emergency stop and overtravel stop.
- Separate or redundant control paths must be provided for critical control functions.
- System control paths may include communication links. Consideration must be given to the implications of unanticipated transmission delays or failures of the link.(1)
- Each implementation of a Flex PC BOX must be individually and thoroughly tested for proper operation before being placed into service.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

(1) For additional information, refer to *NEMA ICS 1.1* (latest edition), "*Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control*".

User Comments

We welcome your comments about this document. You can reach us by e-mail at techcomm@schneider-electric.com.


Overview

1

Package Contents

Introduction Before using the Software Mirroring Utility, please confirm that all your referenced product items listed below, are present.

Box Package Items According to the modular configuration choose (see your product reference), the following items are included in the Software Mirroring Utility package:

CD-ROM containing the Software Mirroring, Software Mirroring licence sticker and this user manual.	<div data-bbox="827 795 960 971"><p>Installation Guide</p></div> <div data-bbox="986 873 1002 889">+</div> <div data-bbox="1030 820 1190 922"></div>
--	---

This unit has been carefully packed, with special attention to quality. However, should you find anything damaged or missing, please contact your local distributor immediately.

Disk Characteristics



At a Glance

This chapter presents the Software Mirroring Utility.

What's in this Chapter?

This chapter contains the following topics:

Topic	Page
Disk Utility Features	14
Software Design	16
CD-ROM Contents	16

Disk Utility Features

Usage Environment

In order to use the Software Mirroring Utility, two hard disk drive units are required. A pre installed hard disk can be used as one of those two Hard Disk Drive (HDD) units.

Supported items:

- Model:
- Hard Disk Drive: equal to or greater than 80 GB.
- Supported OS: Windows XP Pro SP2 and above.

NOTE: A Dynamic Disk feature of Windows XP Pro SP2 and above is not supported.

Features

The Flex PC BOX. Software Utility uses RAID1 as the hard disk management technology.

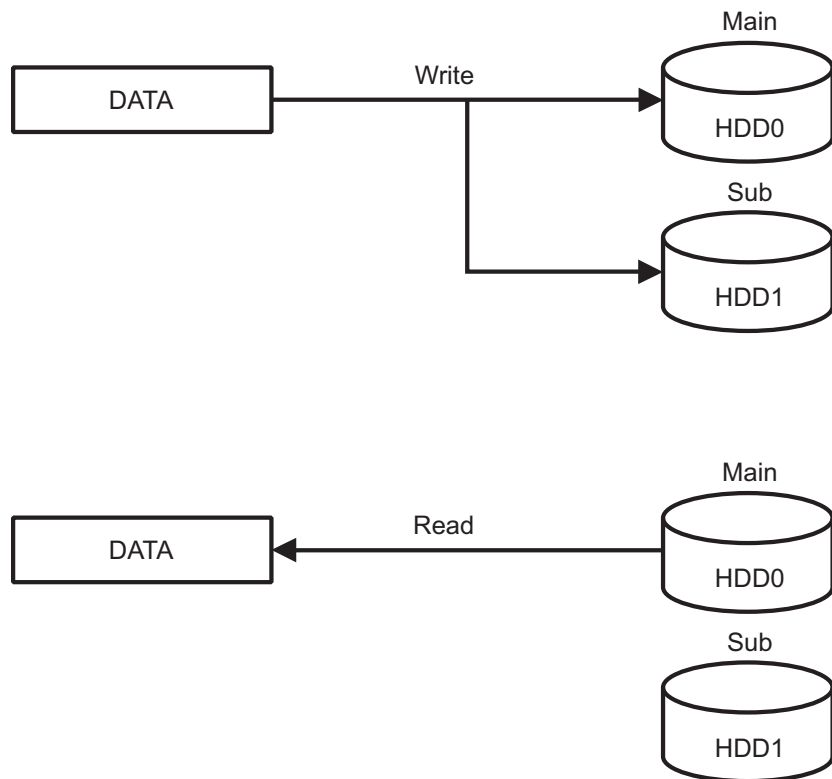
Redundant Array of Independent Disks (RAID) is a multiple hard disk management system that allows high speed access and redundancy of user data to increase user system reliability and protect from data loss in the case of a hard disk failure.

The following levels of RAID are available:

- RAID0.
- RAID1.
- RAID3.
- RAID4.
- RAID5.

RAID1, which is used in the system, uses two HDD units and saves the same data simultaneously to both HDD units. This provides a high level of system reliability. However, since this system considers both HDD drives to be a single unit, the data capacity of the system is equal to only one of the drives.

Example: if both drives are 60GB drives, the total system capacity is 60GB, not 120GB.



NOTE: The write is performed to both main and sub disks, but the read is done from the main disk only.

Software Mirroring Utility supports hot swapping. When one of the HDD becomes faulty, it can be replaced with a new HDD while the other is operating.

Software Design

Presentation

To use the Software Mirroring Utility, the following software is available:

- Software Mirroring Disk Driver:
Your unit's system (OS) requires that, in order to write data to both drives (same size), and to detect HDD errors that occur during the data write process, this utility reports those errors to the Mirroring Disk Utility.
- Software Mirroring Disk Utility:
This program monitors the condition of the Mirroring Disk Driver, and reports errors to the user. This utility also includes the feature of combining two (same size) HDD units into a single Mirroring disk.

CD-ROM Contents

The Software Mirroring unit's CD-ROM data is organized as follows.

Software Mirroring unit's CD-ROM:

- Flex PC BOX:
Setup System Mirroring for Flex.exe
- Reader:
 - Adobe® Reader® English version
 - Adobe® Reader® French version
 - Adobe® Reader® Italian version
 - Adobe® Reader® Spanish version
 - Adobe® Reader® Deutsche version
- Manual:
eng EIO0000000157.pdf (PDF Manual - English version)

Disk Setup



At a Glance

This chapter presents the Software Mirroring Utility Disk Setup.


What's in this Chapter?

This chapter contains the following topics:

Topic	Page
Boot Hard Disk Drive (HDD) Preparation	18
Utility Installation	19
Software Mirroring HDD Preparation	27
Software Mirroring Disk Configuration	28

Boot Hard Disk Drive (HDD) Preparation

Introduction

 **DANGER**

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both the Flex PC BOX and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the Flex PC BOX. The AC unit is designed to use 100 ... 240 Vac input. The DC unit is designed to use 23 ... 25 Vdc. Always check whether your device is AC or DC powered before applying power.

Failure to follow these instructions will result in death or serious injury.

Install a Boot HDD as HDD-0

The Boot HDD must be installed as HDD-0.

When the Boot HDD becomes faulty and is removed, the HDD installed as HDD-1 automatically assumes the role of the Boot HDD.

When a normal HDD is installed as HDD-0, it is recognized automatically as the Boot HDD again. (See Magelis Flex PC BOX and associated Front Panels User Manual).

Set up the OS

When a model with the OS pre installed is used, this procedure is not required.

When a non-OS model is used, (see Magelis Flex PC BOX and associated Front Panels User Manual).

Utility Installation

Overview

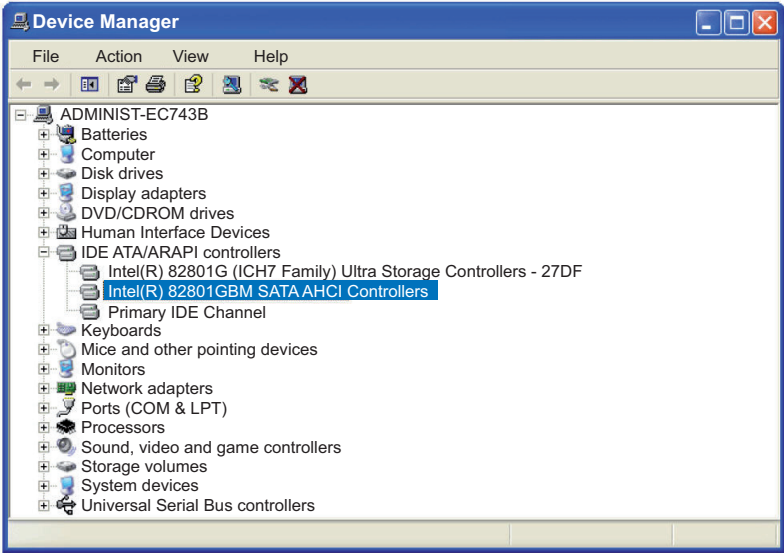
Install the Software Mirroring Utility Disk.

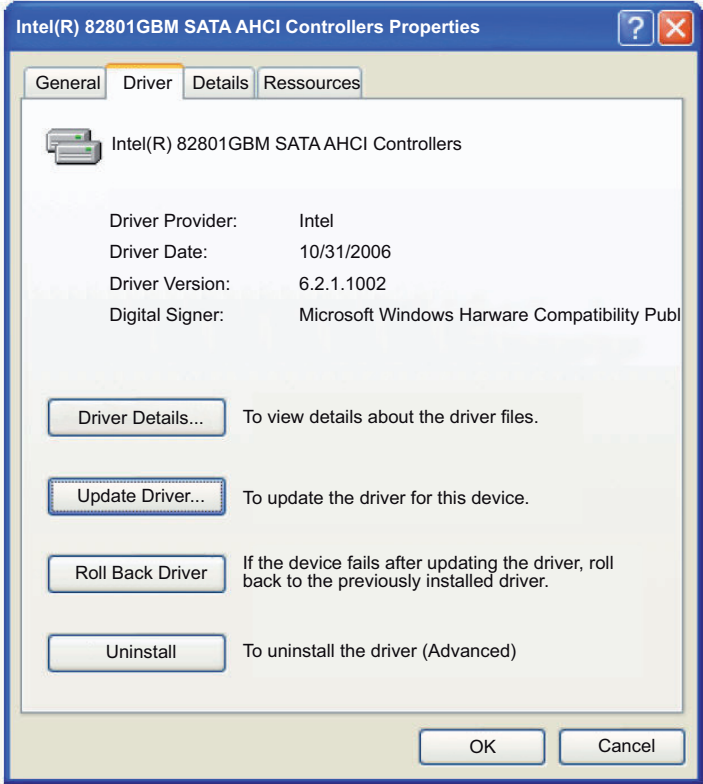
NOTE:


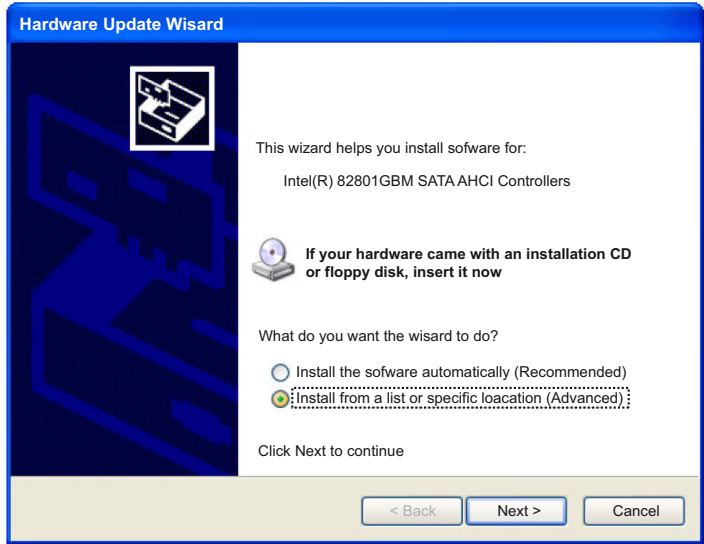
- If you use a version earlier than Windows® XP SP2, there is a possibility that Windows will fail to boot. Be sure to use SP4 or higher for Windows® XP.
- To install the Software Mirroring Utility Disk, System Monitor must be installed in advance. When a Flex PC BOX with the OS pre installed is used, System Monitor is factory installed. When a non-OS type Flex PC BOX is used, download and install the System Monitor utility from the “Schneider-Electric” support site.

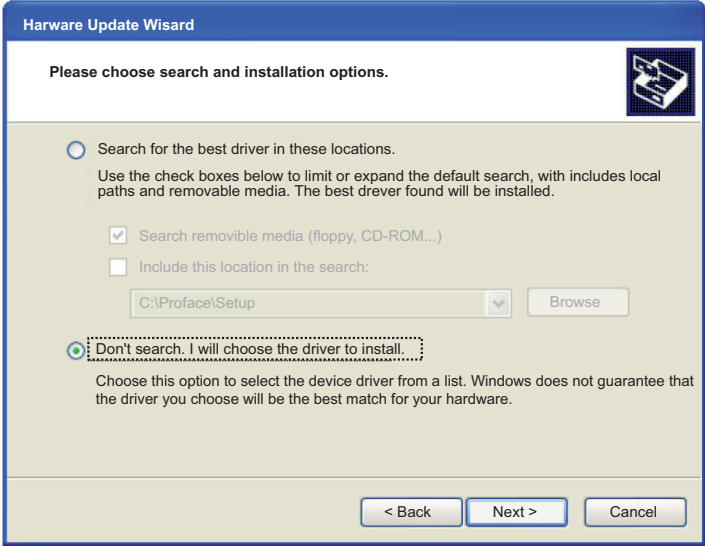
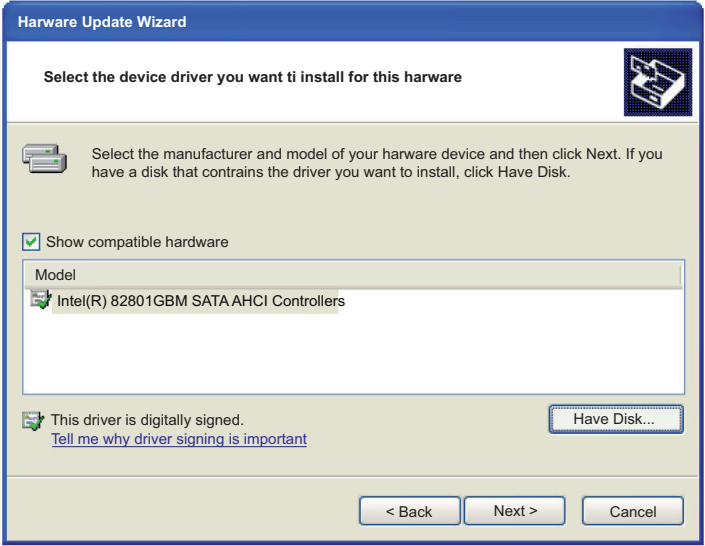
How to Install

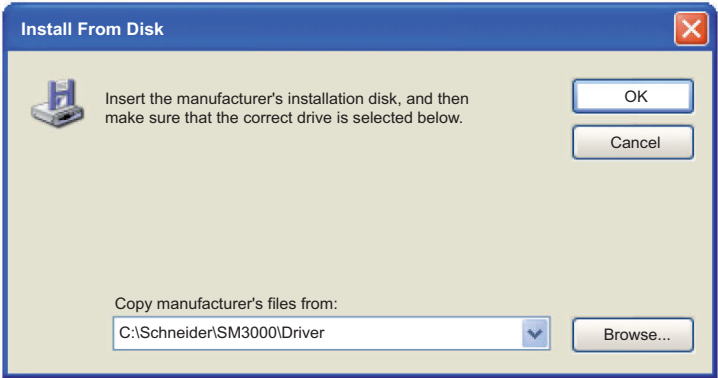
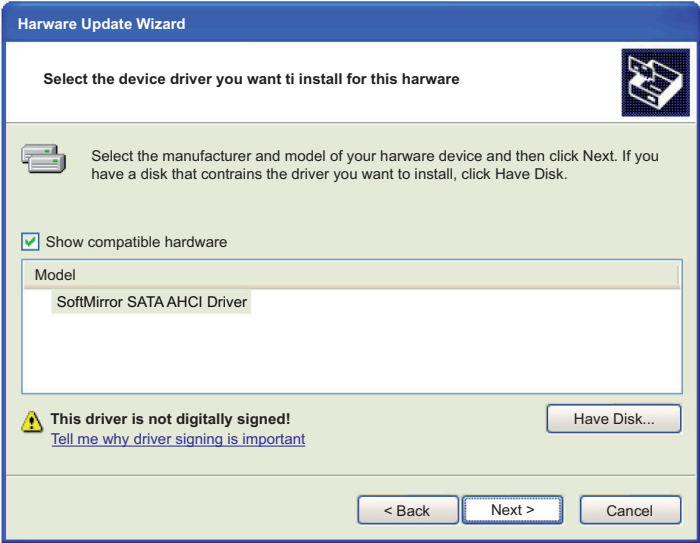
The following table displays how to install the Software Mirroring Utility disk in the Boot HDD with Window XP:


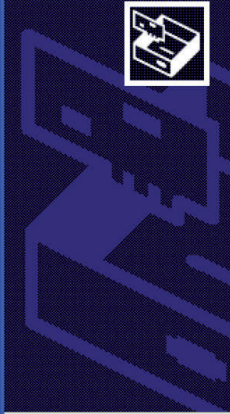

Step	Action
1	Execute <code>setup.exe</code> in Flex PC BOX-[win2kxp] from the CD-ROM and follow the instructions on the screen to install the Software Mirroring Utility Disk.
2	After installation is finished, select <code>Control Panel - System - Hardware</code> to open Device Manager.
3	Under IDE ATA/ATAPI controllers, double-click Intel® 82801GBM SATA AHCI Controller: <div></div>

Step	Action
4	<div>On the driver's properties dialog box, select the <code>Driver</code> tab and click the <code>Update Driver</code> button:</div> <div><p>The screenshot shows the 'Intel(R) 82801GBM SATA AHCI Controllers Properties' dialog box with the 'Driver' tab selected. The 'Driver Provider' is Intel, the 'Driver Date' is 10/31/2006, and the 'Driver Version' is 6.2.1.1002. The 'Digital Signer' is Microsoft Windows Hardware Compatibility Publi. The 'Update Driver...' button is highlighted with a dashed border.</p></div>

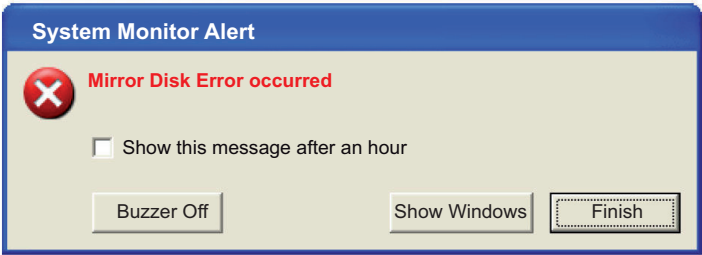
Step	Action
5	<p>On the Hardware Update Wizard, select No, not this time, and click Next:</p> 
6	<p>Select Install from a list or specific location and click Next:</p> 

Step	Action
7	<div>Select Don't search, I will choose the driver to install.</div> <div><p>The screenshot shows the 'Hardware Update Wizard' window. The title bar says 'Hardware Update Wizard'. The main text says 'Please choose search and installation options.' There are two radio buttons: 'Search for the best driver in these locations.' (which is currently selected) and 'Don't search. I will choose the driver to install.' (which is the target). Below the first option, there are checkboxes for 'Search removable media (floppy, CD-ROM...)' (checked) and 'Include this location in the search:' (unchecked). A text box shows 'C:\Proface\Setup' with a 'Browse' button next to it. At the bottom are '< Back', 'Next >', and 'Cancel' buttons.</p></div>
8	<div>Click the Have Disk button:</div> <div><p>The screenshot shows the 'Hardware Update Wizard' window. The title bar says 'Hardware Update Wizard'. The main text says 'Select the device driver you want to install for this hardware'. There is a 'Have Disk...' button. Below the text, there is a section for 'Show compatible hardware' with a list box containing 'Intel(R) 82801GBM SATA AHCI Controllers'. At the bottom are '< Back', 'Next >', and 'Cancel' buttons.</p></div>

Step	Action
9	<p>On the file specification dialog box, select C:\Schneider\SM3000\Driver and click OK:</p> 
10	<p>Confirm that SoftMirror SATA AHCI Driver is selected, and then click Next. If you cannot find the file, install the utility first.</p> 

Step	Action
11	<p>On the confirmation screen, click Continue anyway:</p> <div><div>Hardware Installation</div><div><p>The software you are installing for this hardware:</p><p>SoftMirror SATA AHCI Driver</p><p>Has not passed Windows Logo testing to verify its compatibility with windows XP. (Tell me why this testing is important.)</p><p>Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.</p><div><div>Continue Anyway</div><div>STOP Installation</div></div></div></div>
12	<p>Click the Finish button, close the Device Manager, and restart the Flex PC BOX to complete the installation:</p> <div><div>Hardware Update Wizard</div><div><div><div>Completing the Hardware Update Wizard</div><p>The wizard has finished installing the software for:</p><div> SoftMirror SATA AHCI Driver</div><p>The hardware you installed will not work until you restart your computer</p><p>Click Finish to close the wizard.</p><div><div>< Back</div><div>Finish</div><div>Cancel</div></div></div></div></div>

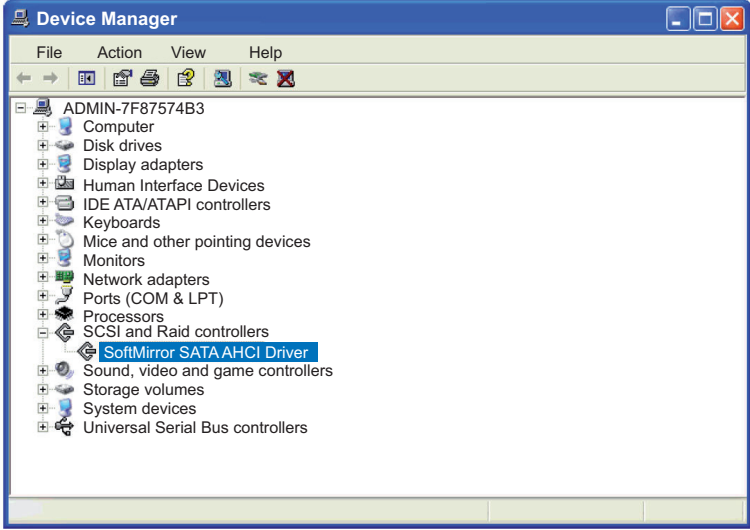
NOTE: Because the Software Mirroring Utility Disk is not configured just after installation, a System Monitor error message is displayed:

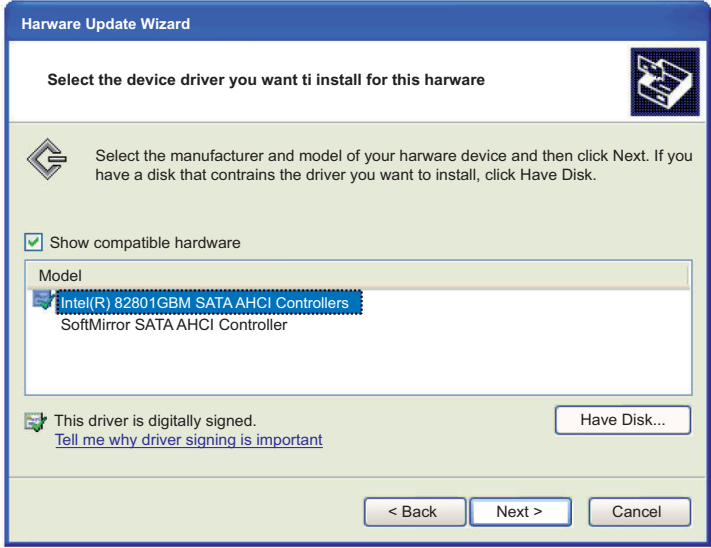


To configure the Software Mirroring Utility (see page 28).

How to uninstall

The following table displays how to uninstall the Software Mirroring Utility in the Boot HDD with Window XP:

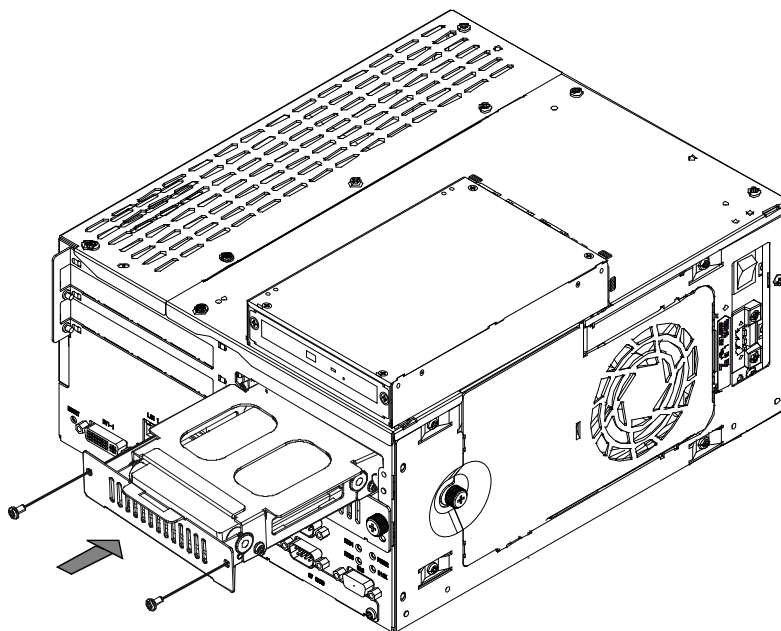
Step	Action
1	Remove APL-SM3000 SoftMirror Utility from Add or Remove Program:
2	Open Device Manager and double-click SoftMirror STAT AHCI Driver under SCI and RAID Controller: <div></div>
3	On the driver's properties dialog box, select the Driver tab and click the Update Driver button.
4	On the Hardware Update Wizard, select No, not this time and click Next.
5	Select Install from a list or specific location and click Next.

Step	Action
6	Select Don't search, I will choose the driver to install. and click Next.
7	Select Intel® 82801 GBM SATA AHCI Controller from the list of the model. <div></div>
8	Click the Finish button, close the Device Manager, and restart the Flex PC BOX to complete the installation.

Software Mirroring HDD Preparation

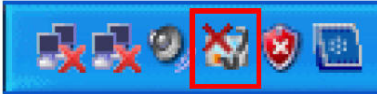
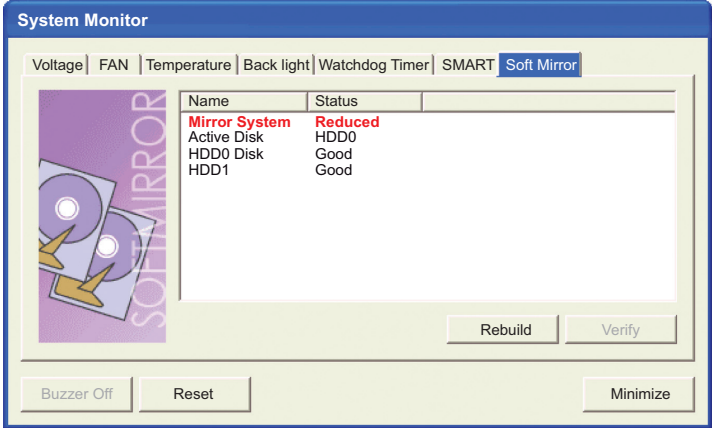
Installing the HDD

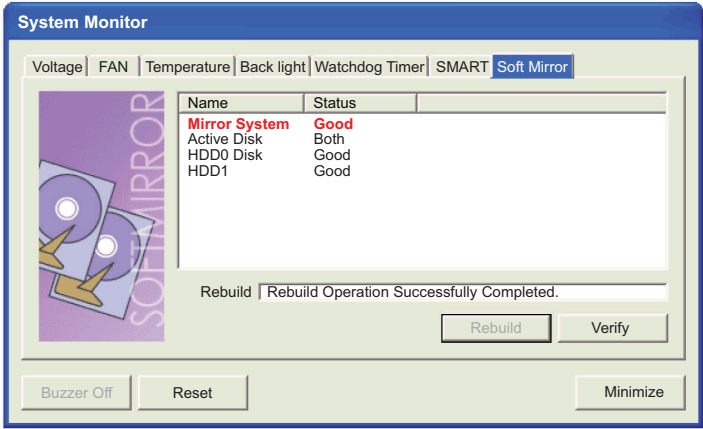
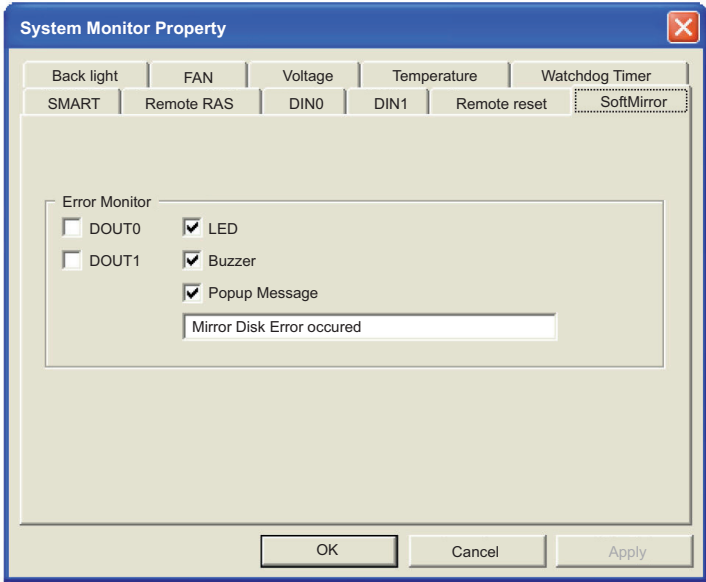
Refer to Magelis Flex PC BOX and associated Front Panels User Manual (Hard Disk Drive (HDD) Unit's Installation).



Software Mirroring Disk Configuration

How to configure The following table displays how to configure Software Mirroring Utility:

Step	Action
1	<p>Double-click the System Monitor icon in the task tray, to display the System Monitor screen:</p> 
2	<p>On the system Monitor, click the <i>Rebuild</i> button. This action starts copying the contents of the first HDD to the second HDD.</p>  <ul style="list-style-type: none">● Rebuilding the mirroring disk will take about 40 minutes.● The HDD can be accessed during the rebuild process.● During the rebuild process, a progress bar appears at the bottom of the window to show the progress.

Step	Action
3	<p>When the rebuild process is finished, the status of Mirror System changes to Good and the Mirroring Disk feature will begin to operate. Click the Reset button to clear the SoftMirror errors.</p> <div></div>
4	<p>Select Control Panel-System Monitor Property. Result: The System Monitor Property is display.</p>
5	<p>Select the SoftMirror tab and check the error actions that you want to set:</p> <div></div>

Using the Mirroring Disk Feature

After the rebuilding process of the Software Mirroring Disk is finished, the Mirroring Disk feature will automatically become available unless there are driver errors.

Software Mirroring Disk Utilization



At a glance

This chapter presents the Software Mirroring Utility Disk Utilization.

What's in this Chapter?

This chapter contains the following topics:

Topic	Page
Software Mirroring Disk Operation	32
Replacing the HDD	37
Error Messages	39
Restrictions	42

Software Mirroring Disk Operation

Overview

After the Mirroring Disk is rebuilt, mirroring will be performed continually unless the drives have any errors.

When the `System Monitor` icon is double-clicked on the task tray, the System Monitor window appears. The status of the Software Mirroring Disk, HDD0, and HDD1 can be checked in this window.

CAUTION

EQUIPMENT DAMAGE

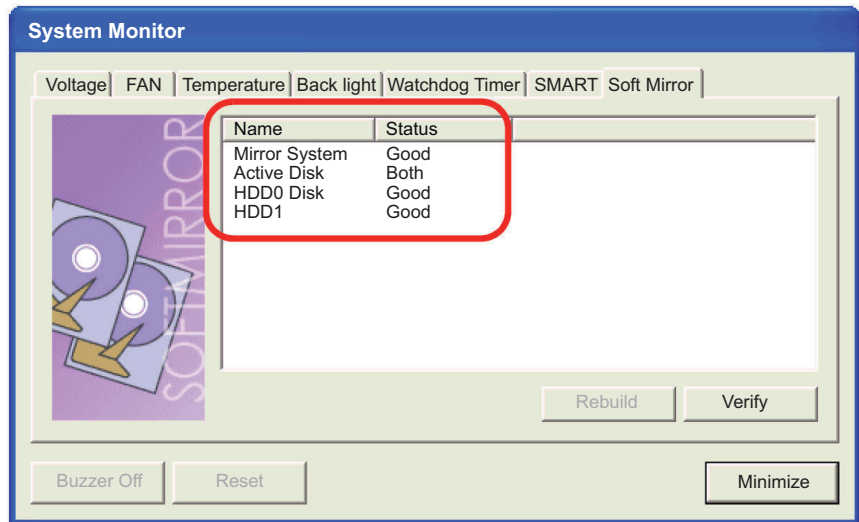
- Do not replace the HDD with the HDD that was configured for software mirroring using another panel computer.
- Do not use a non-Windows operating system to run the Flex PC BOX or to write data to the HDD unit.
- After configuring the Mirroring Disk, do not change the previously specified Boot Drive settings.
- Do not turn OFF the power of the Flex PC BOX while the HDD is being accessed.

Failure to follow these instructions can result in equipment damage.

Drive Condition Detailed Information

To open the System Monitor Property: select `Start-Program-System Monitor`. On the `Smart` tab, enable the SMART monitoring, and the SMART monitoring (self-monitoring of hardware) will be applied to each HDD.

The following figure displays the informations on System Monitor:



Mirror Status

This menu provides the current status of the Mirroring Disk operation. The status will be any of “Rebuild”, “Good”, “Reduced”, or “Dead”.

The following table presents current status of the Mirroring Disk operation:

Rebuild	The Mirroring Disk unit is now being rebuilt.
Good	Indicates Mirroring is being performed normally.
Reduced	During “Good” operation, indicates that an error has occurred in one of the HDD units and that only one is operating. After confirming which disk is not operating, change the unit for a new one as soon as possible.
Dead	During “Reduced” operation, indicates that an error has occurred. If operation continues, there is the possibility that the Flex PC BOX unit’s OS (system) can stop operating. Therefore, it is strongly recommended that you backup your current Flex PC BOX data and replace the non-operating HDD unit as soon as possible.

When Windows is restarted or shutdown, disk status information is destroyed. This may prevent the Hard Disk Mirroring utility from being able to identify which HDD is damaged. In this case, use the `Event Viewer` to check which HDD is damaged (see page 39).

Active Disk

The following table displays which HDD (HDD0, HDD1, and both) is in current operation:

Disk	Indication
HDD0	Is operating.
HDD1	Is operating.
Both	Both HDD-0 and HDD-1 are operating.

HDD0/HDD1 Status

The following table displays the condition of the HDD units connected to the Flex PC BOX:

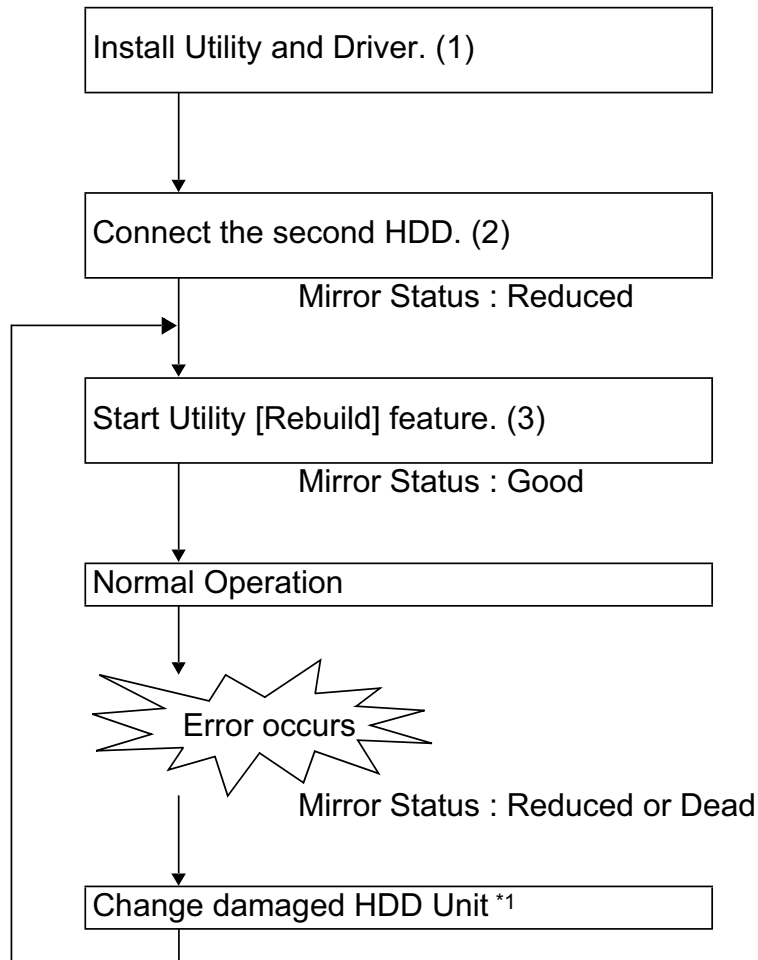
Condition	Indication
No Device	No device is connected.
Good	Normal disk unit operation.
Broken	Disk error has occurred.

Monitoring via a Customer Application

A customer application can be used to monitor the status of the Mirroring Disk unit.

Software Mirroring Disk Operation Flow

The following figure displays the software Mirroring Disk operation cycle:



*1: Do not change the Boot HDD setting.

(1)	(see page 19)
(2)	(see page 27)
(3)	(see page 28)

NOTE: You can replace only the faulty HDD while the normal HDD is operating.

Informations for the “Reduced” operation

When an error occurs in a single HDD unit, and its status becomes “Reduced”, as soon as possible, change the drive for a new one and configure it.

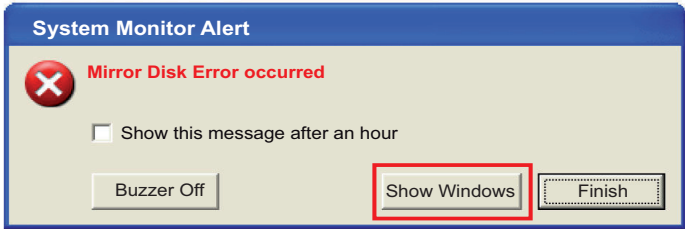
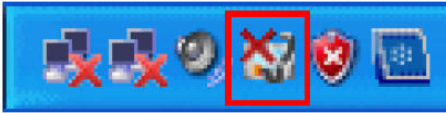
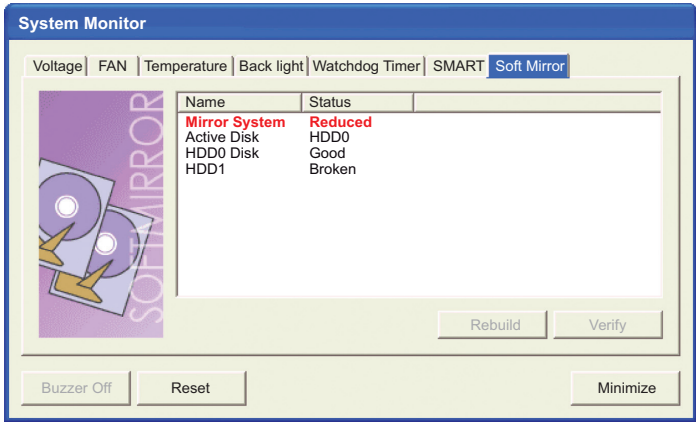
If both HDD units have errors and the system is still operating, save all important data to a separate, external media. Then, replace both HDD units.

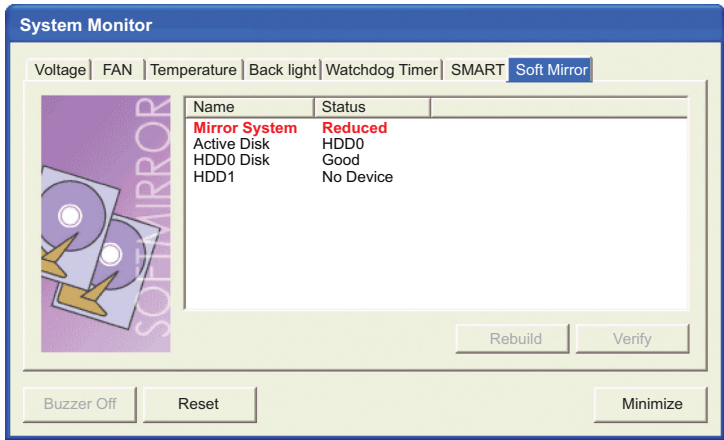
Replacing the HDD

How to replace the HDD

NOTE: To set the system to automatically display error occurrences, you have to set the error notification action on the `System Monitor Property` screen (see page 28).

The following table presents how to replace the HDD when an error message dialog is displayed:

Step	Action										
1	<p>Click the <code>Show Window</code> button:</p>  <p>Or double-click the System Monitor icon in the task tray:</p> 										
2	<p>The damaged HDD is displayed as “Broken”. In addition, the LED for the damaged HDD illuminates in orange.</p> <p>Select the <code>Soft Mirror</code> tab to check which HDD is damaged.</p>  <table><thead><tr><th>Name</th><th>Status</th></tr></thead><tbody><tr><td>Mirror System</td><td>Reduced</td></tr><tr><td>Active Disk</td><td>HDD0</td></tr><tr><td>HDD0 Disk</td><td>Good</td></tr><tr><td>HDD1</td><td>Broken</td></tr></tbody></table>	Name	Status	Mirror System	Reduced	Active Disk	HDD0	HDD0 Disk	Good	HDD1	Broken
Name	Status										
Mirror System	Reduced										
Active Disk	HDD0										
HDD0 Disk	Good										
HDD1	Broken										

Step	Action										
3	<p>Remove the damaged HDD.</p> <p>Result: After the HDD is removed, the “ED for the HDD goes out and the display of System Monitor is changed to “No Device”.</p> <p>Do not use the removed HDD. Even if the HDD is installed again, it cannot be used because it is recognized as “broken”.</p>  <table><thead><tr><th>Name</th><th>Status</th></tr></thead><tbody><tr><td>Mirror System</td><td>Reduced</td></tr><tr><td>Active Disk</td><td>HDD0</td></tr><tr><td>HDD0 Disk</td><td>Good</td></tr><tr><td>HDD1</td><td>No Device</td></tr></tbody></table>	Name	Status	Mirror System	Reduced	Active Disk	HDD0	HDD0 Disk	Good	HDD1	No Device
Name	Status										
Mirror System	Reduced										
Active Disk	HDD0										
HDD0 Disk	Good										
HDD1	No Device										
4	Install a new HDD.										
5	Set up the Mirroring Disk (see page 28).										

Error Messages

LED

If the software mirroring disk error is detected during RAS System Monitor operation, the LED indicator will illuminate in orange.

Event Log

Whenever Software Mirroring Disk features are changed, or a device error is detected, the driver will write data to an Event Log.

The events output by the Software Mirroring Disk Driver will be written to the Event Log's System Log.

Event Log data can be viewed using the Event Viewer or the Soft Mirror Log Viewer.

Event Log Details Display in the Event Viewer

- How to start the Event Viewer
Start Event Viewer from Control Tools in Control Panel.
The System log is displayed.
- Display in the Event Viewer

The Event Log details will appear as follows:

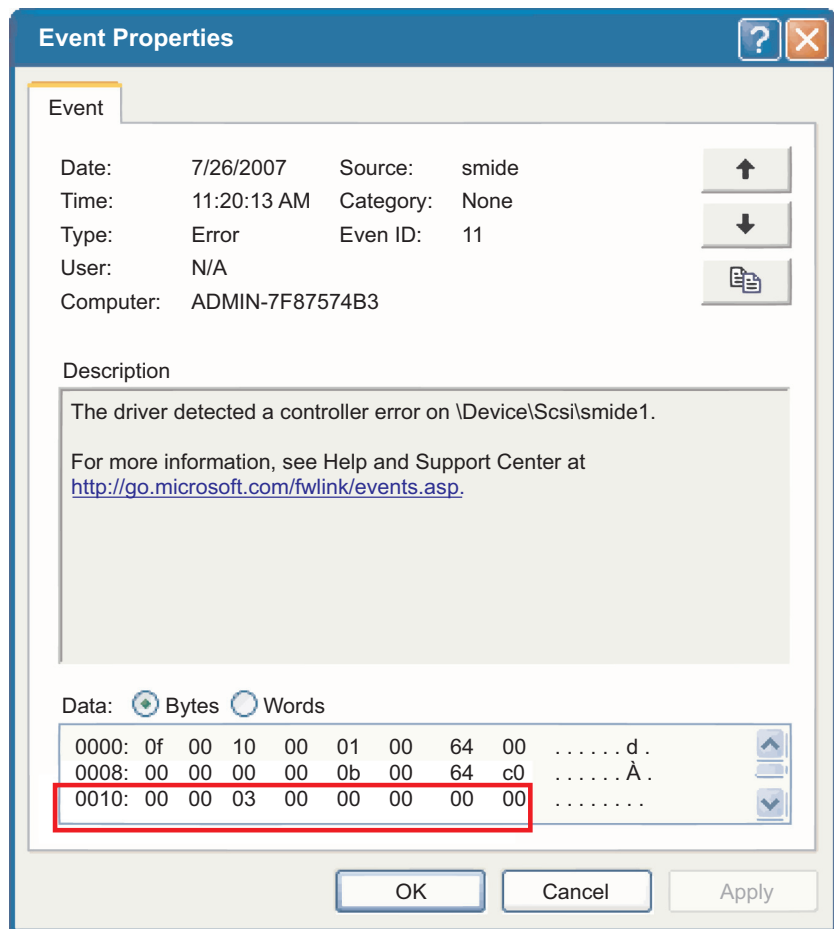
Event ID: 11

Source: smide

Type: Error

Class: None

The following figure displays the Event viewer

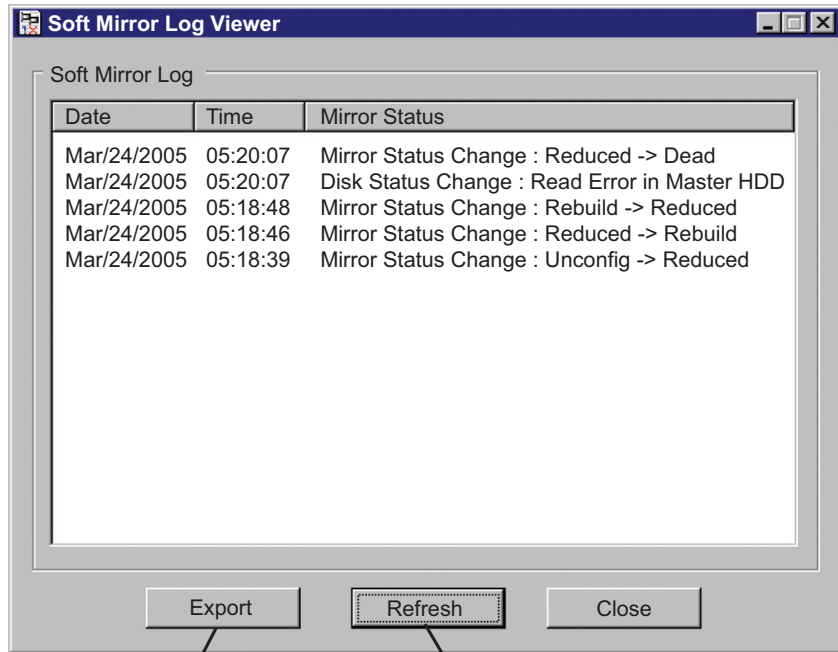


NOTE: The previous page's picture shows the code data output by the Software Mirroring Disk Driver during Event Log creation. This data can be seen in the above rectangle, which frames the four (4) bytes of data following "0010h". Depending on the code data output, you can diagnose if the problem is due to a Mirroring Disk condition change or a device error.

Event Log Details Display in the Soft Mirror Log Viewer

- How to start the Soft Mirror Log Viewer
Start → Program → Soft Mirror Disk Utility → Soft Mirror Log Viewer
- Display in the Soft Mirror Log Viewer

The following figure displays the Event Log details:



Exports the Event Log contents to a CSV file

Acquires the latest Event Log information

Soft Mirror Log viewer displays only the Event Log information which belongs to "software Mirroring Utility". Click on the Refresh button, and the latest Event Log information can be viewed on Soft Mirror Log viewer. (It won't be automatically renewed).

LED display status:

The LED display status of each HDD changes depending on the status of the corresponding HDD.

Disk Status	LED	Remarks
No HDD	Not lit	-
HDD is normal	Green (lit)	-
HDD is damaged	Orange (lit)	-
Copy destination HDD during rebuilding	Green/Orange (blinking)	Copy source HDD (active disk): Green (lit)

Restrictions

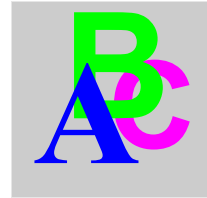
The restrictions are:

- The Flex PC BOX does not support the dynamic disk of Windows® 2000/Windows® XP.
- Data transfer mode only operates in DMA mode.
- To extend the operating life of the Flex PC BOX unit's HDD, it is recommended to use one of the following procedures to turn the HDD OFF when the unit is not being operated.

Set the Window Control Panel - Power Options tab's Turn off hard disks: selection. It is recommended a setting of After 5 minutes.

- Do not use a HDD which has previously failed.
- Do not use a HDD which was used for another device.
- Do not interchange HDD0 and HDD1.
- Do not remove the HDD while the Mirroring Disk status is "Good" or "Rebuild".
- After an HDD is removed, wait at least three seconds before installing it again.
- After removing an HDD for which rebuilding is canceled, do not use it again.

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