MEC-SAT-M002

Mini PCI-e 2-port Serial ATA III board

User's Manual

Third Edition, February 2014

Mini PCI-e SATA Card

User's Manual

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Introduction

Overview

MEC-SAT-M002 is a serial ATA III card for embedded PC. The card follows the Mini PCI-e standard which is complaint with PCI Express x 1 classification and small form factor (30.00 x 50.95 mm). This board fits in any host computer that has Mini PCI-e card slots. MEC-SAT-M002 has great compatibilities with all types of Serial ATA devices, including hard drive, solid state drive, and optical drive.
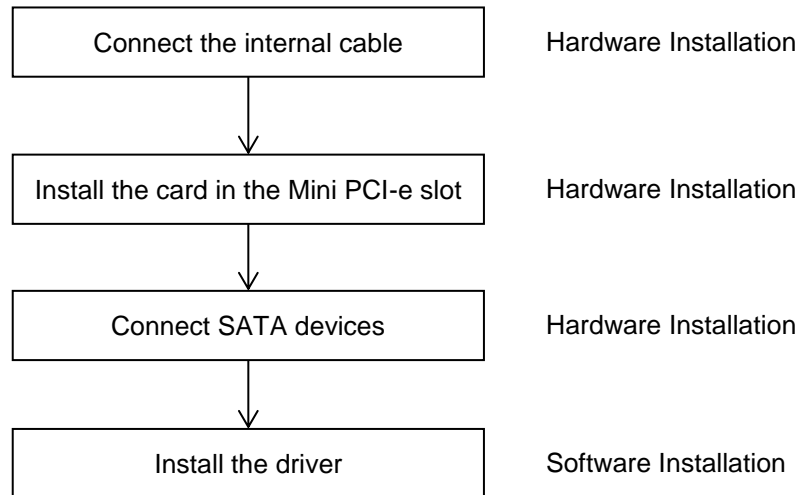
Features

The PCI Express boards have the following outstanding features:

- Single-Lane (x1) PCI-Express with throughput up to 5.0/2.5Gbps
- Fully compliant with PCI-Express Base Specification Rev 2.0
- Two Serial ATA III 6Gb/s ports (Compatible with Serial ATA I and II)
- Transfer rate of 1.5Gbps, 3.0Gbps, and 6.0Gbps
- IDE/AHCI mode supported
- SATA Port Multiplier and Hot-Swap supported

Installation Flowchart

Installation Flowchart of MEC-SAT-M002

The following flowchart provides a brief summary of the procedure you should follow to install the Mini PCI-e card:

Connect the internal cable	Hardware Installation

↓

Install the card in the Mini PCI-e slot	Hardware Installation

↓

Connect SATA devices	Hardware Installation

↓

Install the driver	Software Installation

Package Checklist

The following items are included in the Mini PCI Express board Package:

- Mini PCI-e Card x 1
- 20Pin Cable with two SATA Connectors (30cm) x 1
- Quick Installation Guide (Printed) x 1
- Driver CD x 1

Note: *Notify your sales representative if any of the above items are missing or damaged.*

2

Hardware Installation

This chapter describes the PCI Express Series hardware installation procedure. Since the BIOS automatically assign the PCI Express board's IRQ number and I/O addresses, you must plug in the board before installing the driver.

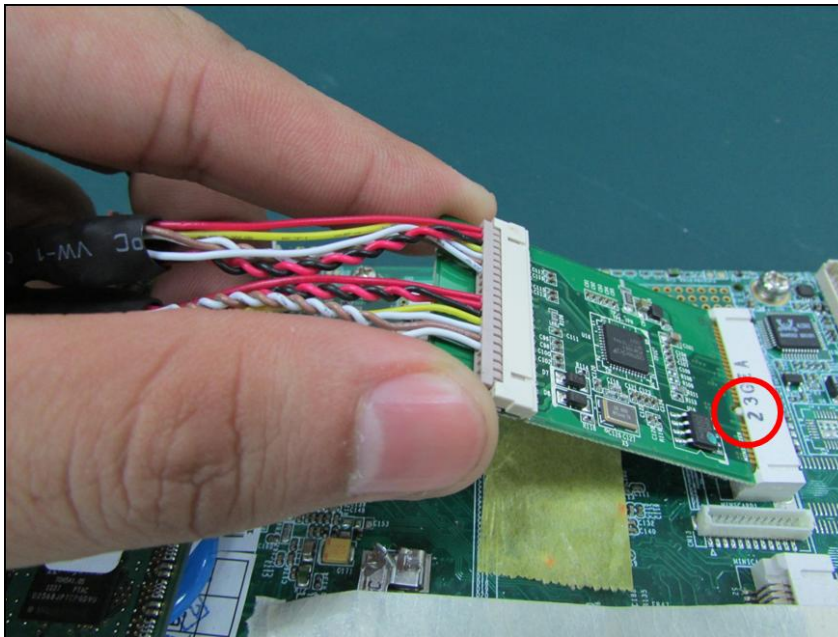| *Step 1*	**Connect the internal cable to the card**

Connect the internal cable to the card (20PIN connector)
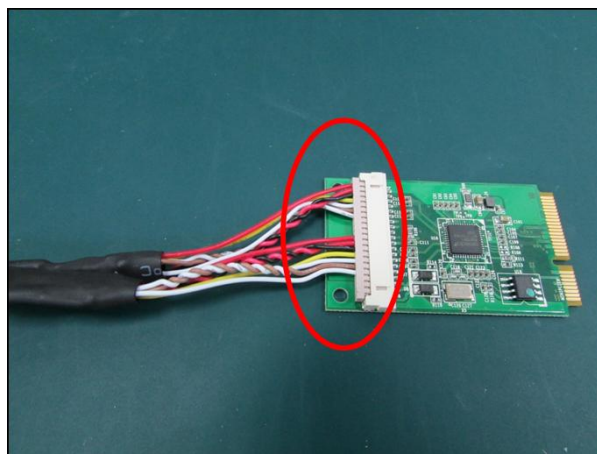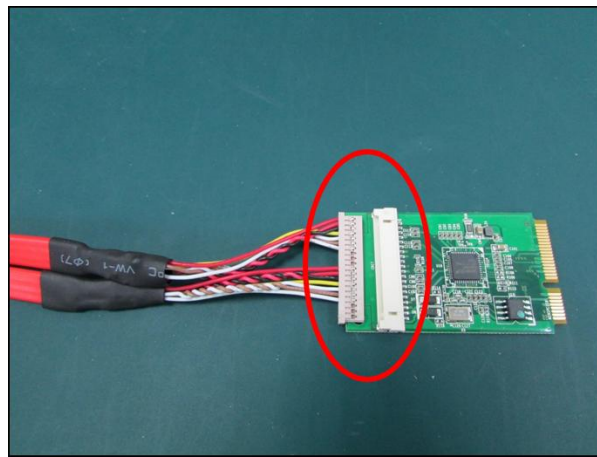
Note	Both sides of the cable connectors are the same, it doesn't matter which side you connect

Step 2 **Install the card to the Mini PCI-e slot**


⚠️ Make sure you install the card in the right position (fool-proof design)

Step 3 **Fix the card on the motherboard (clip type or screw type)**
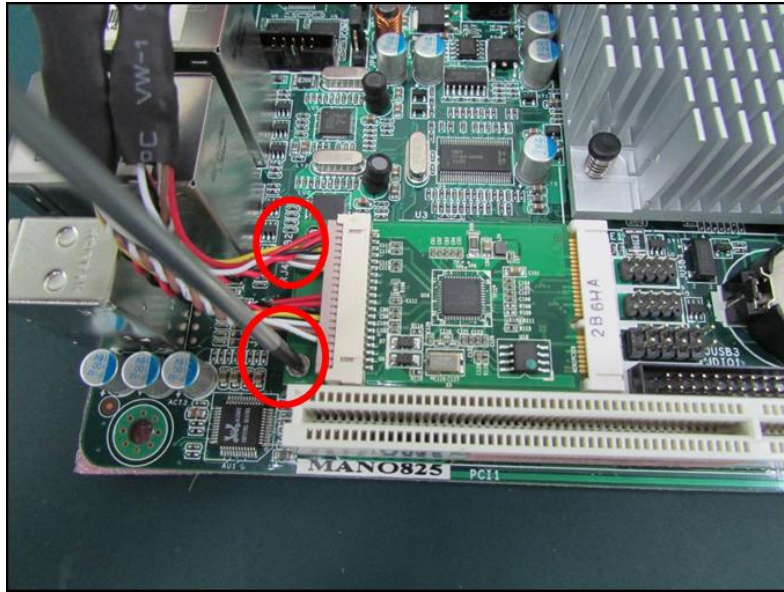
There are 2 options to fix the card. It depends on the design of the motherboard (clip or screw).

1. Clip type: make sure you press down the card and let the clips fix the card

2. Screw type: make sure you tighten up the screws to fix the card
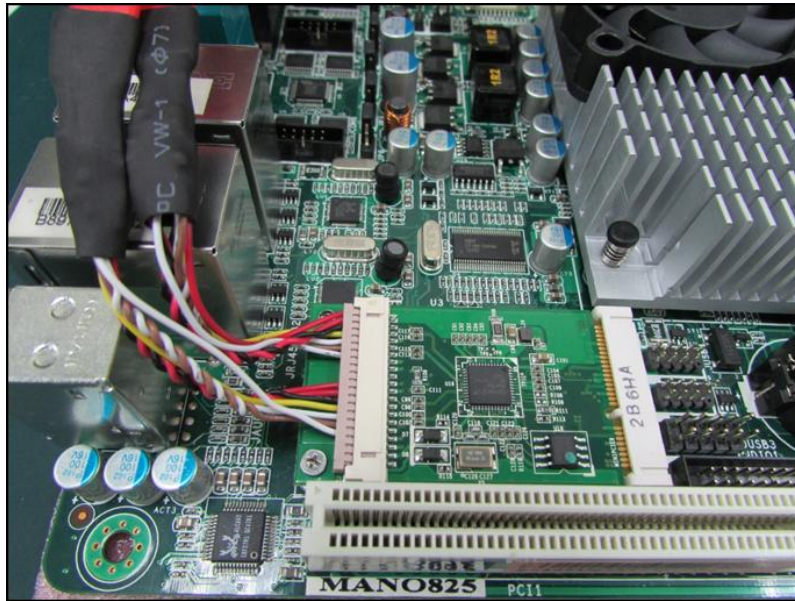
Clip type
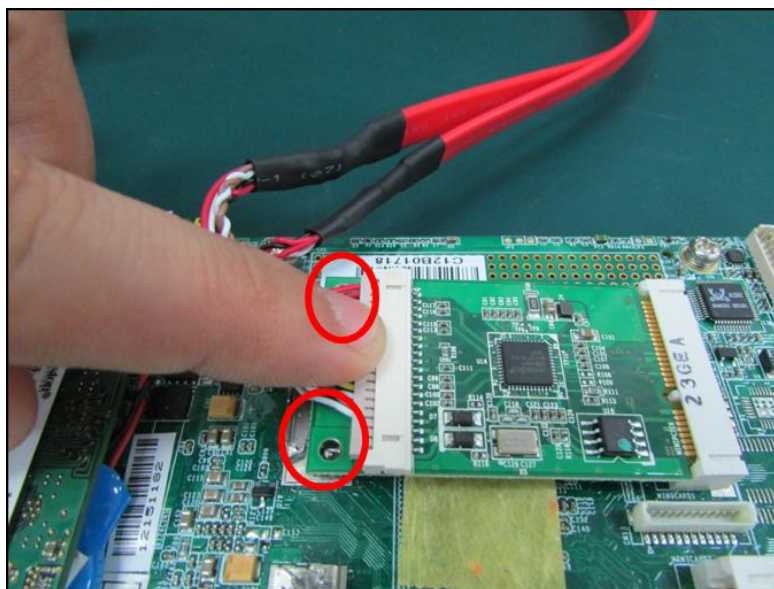
Screw type
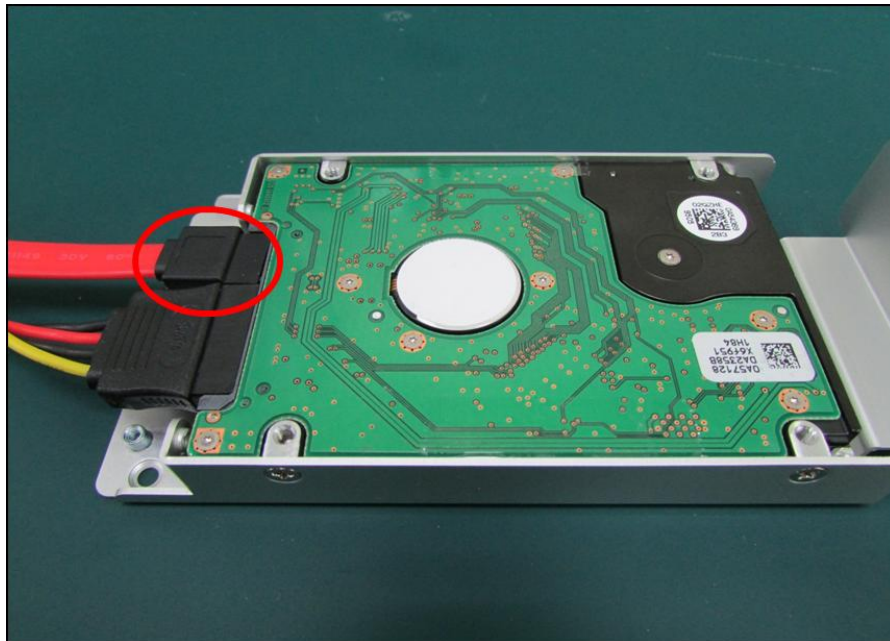

| *Step 4* | **Card installation completed** |

Clip type

Screw type

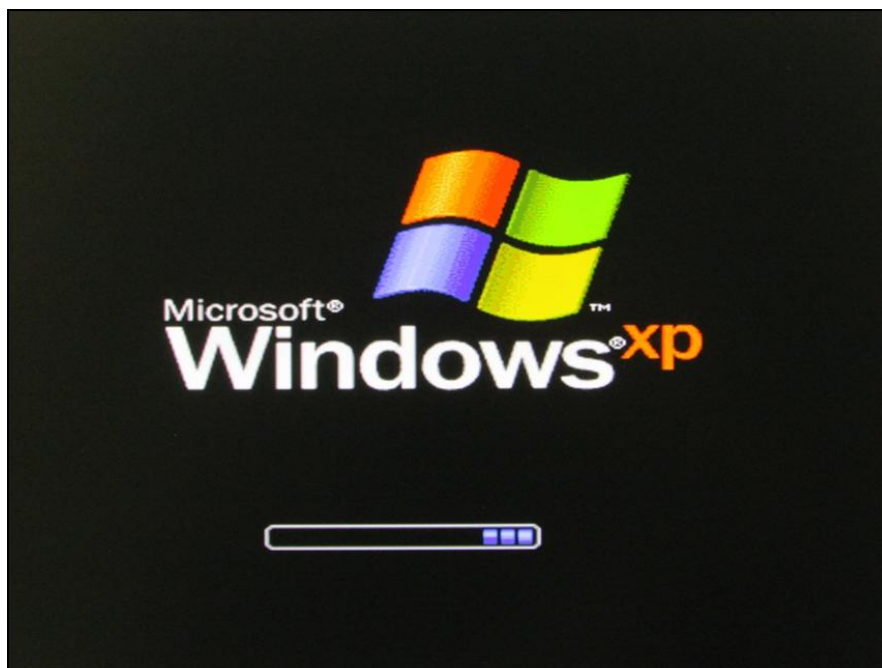| Step 5	**Connect SATA devices and proceed to the next section "Software Installation"**

Connect SATA devices (SATA connector)

3
Software Installation

This chapter gives installation, configuration, and update/removal procedures for the driver for Win 2003, Win XP, Win Vista, Win 7, and Win 8.
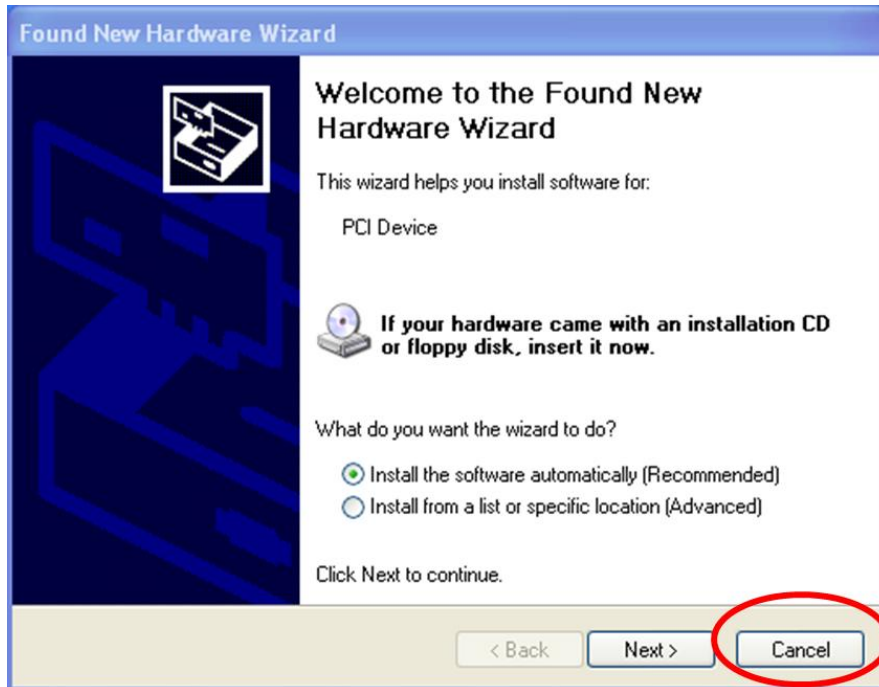
Step 1	Turn on PC and start Windows

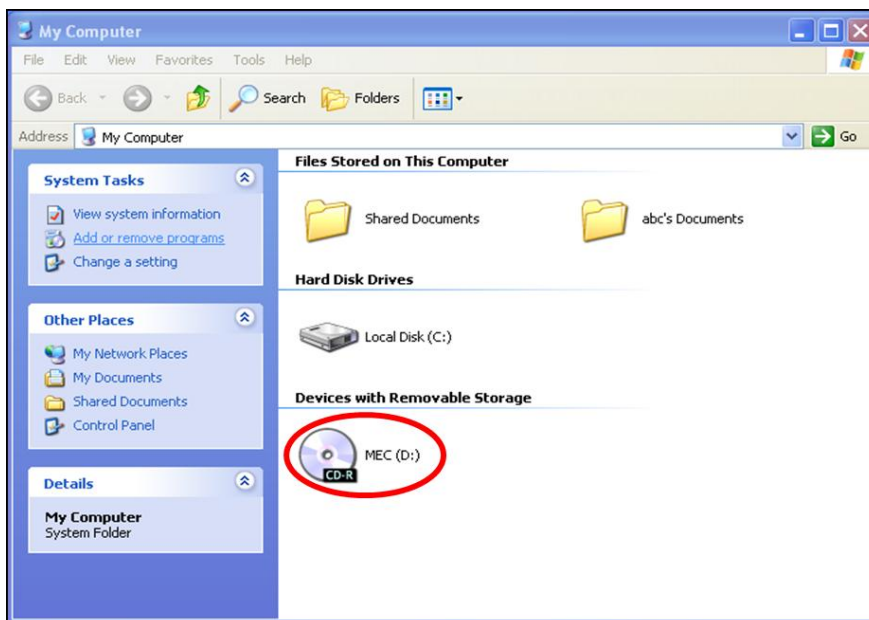| Note	XP OS as example

Step 2 — Windows automatically detects the new device

1. If the card is installed properly, system would detect the new device and the hardware wizard would start automatically.
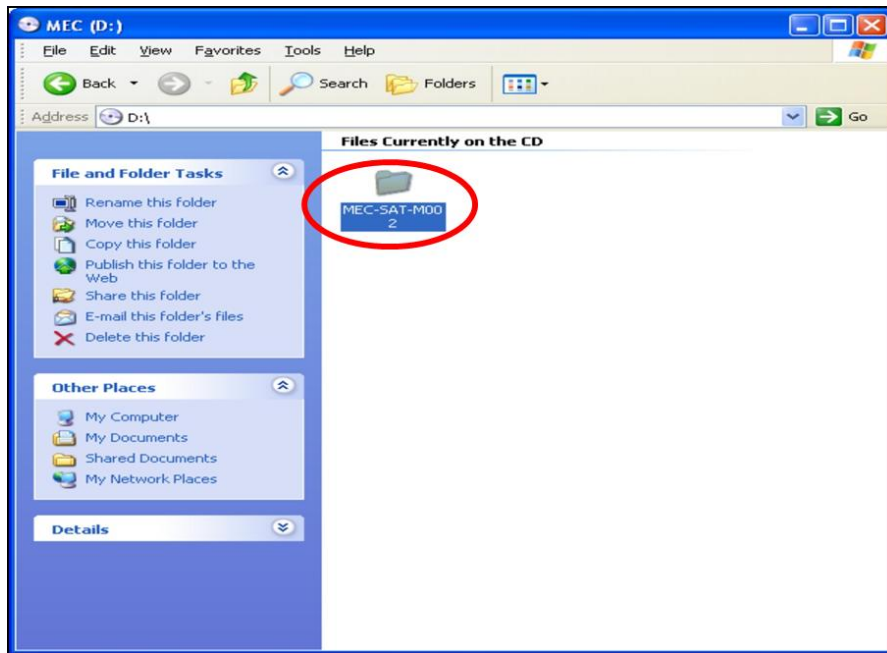2. Click "Cancel" to disregard

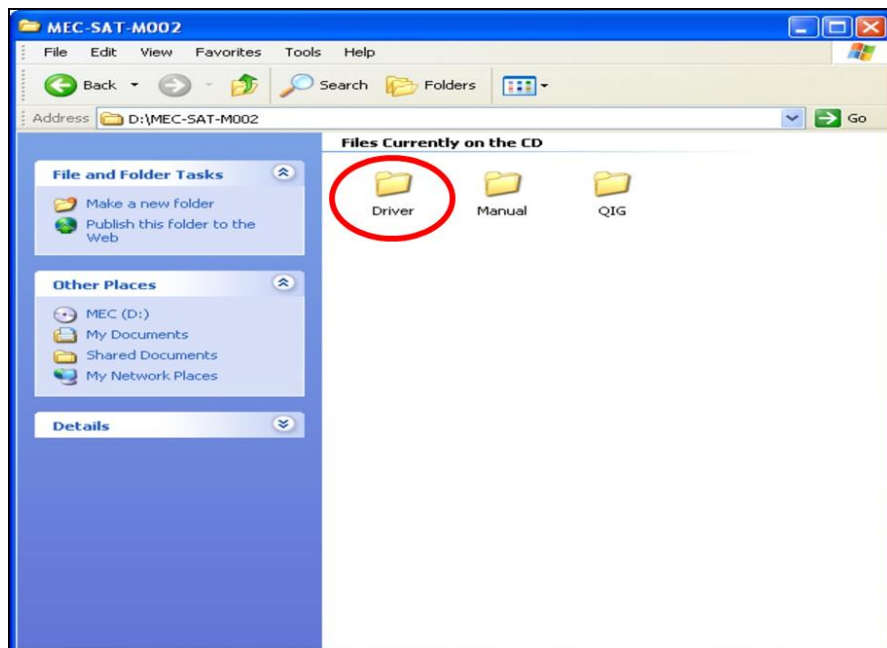## Step 3 — Insert CD

Open the CD drive

| Step 4 | Find the "MEC-SAT-M002" folder |

Open the "MEC-SAT-M002" file folder

| Step 5 | Find the "Driver" folder |

Open the "Driver" folder

Step 6	Find the appointed OS folder (Ex.: XP)

Open the appointed OS folder (We use XP as an example in the above picture)
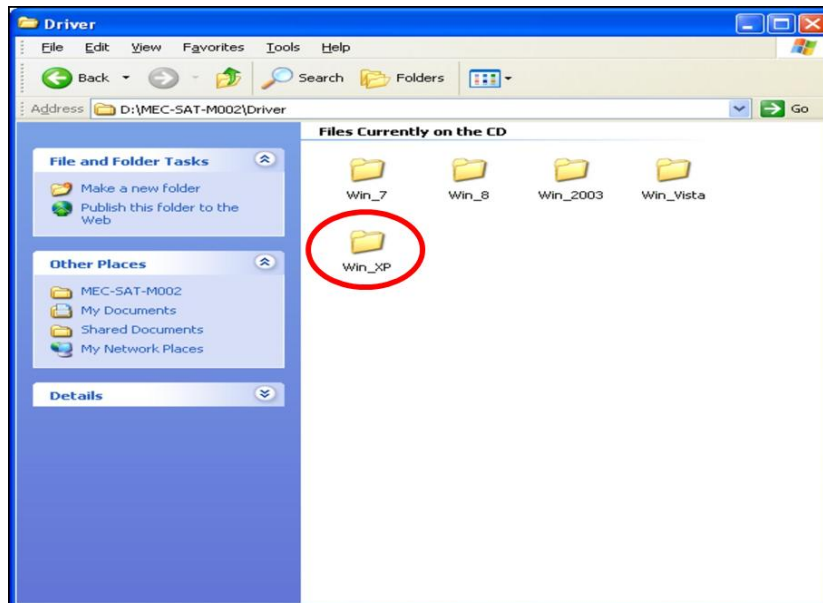
⚠ Make sure you select the correct OS

Step 7	Find your OS version (Ex.: XP 32bit)

Select appoint OS folder (We use XP 32bit as an example in the above picture)
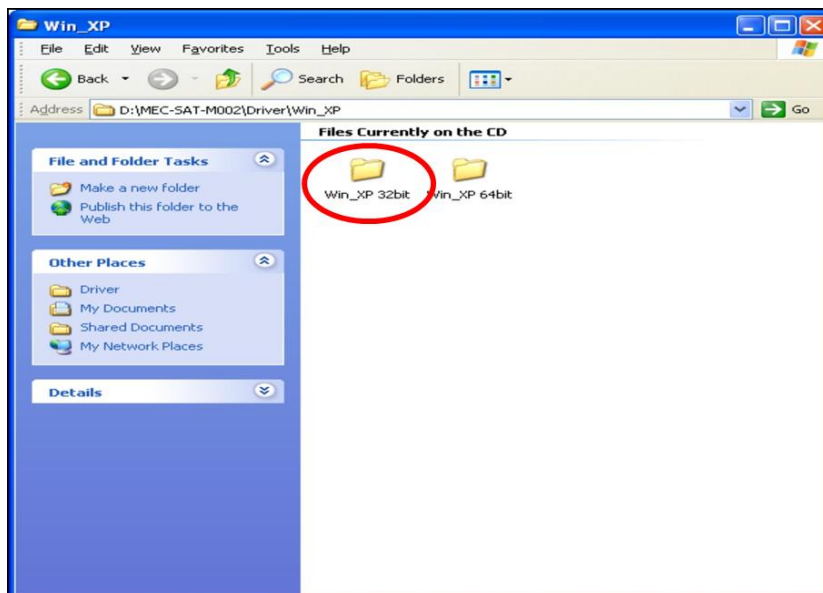
⚠ Make sure you select the correct version of the OS (Ex.: 32-bit or 64-bit)

Run the "set up" file
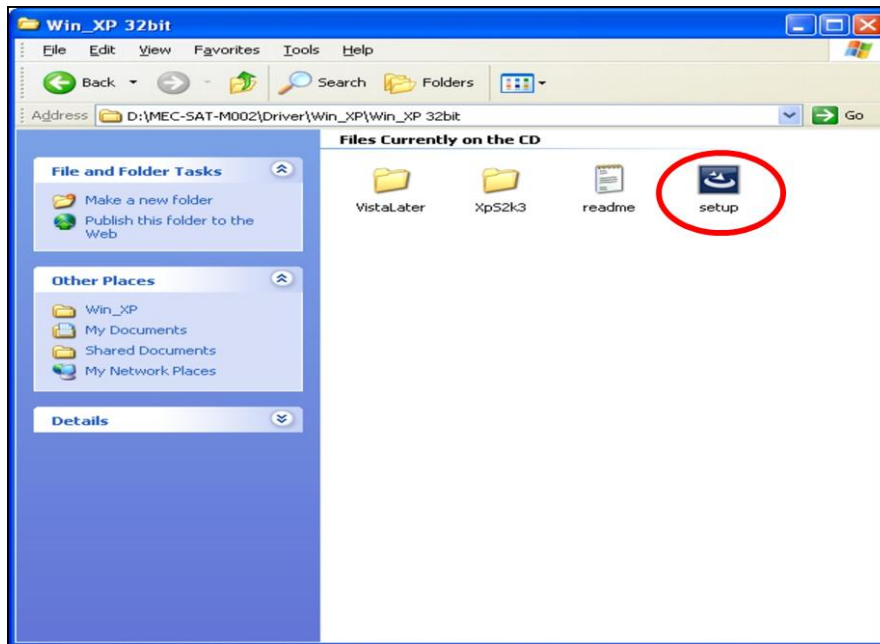
1.   InstallShield Wizard would start automatically after "setup" is clicked

2.   Click "Next"
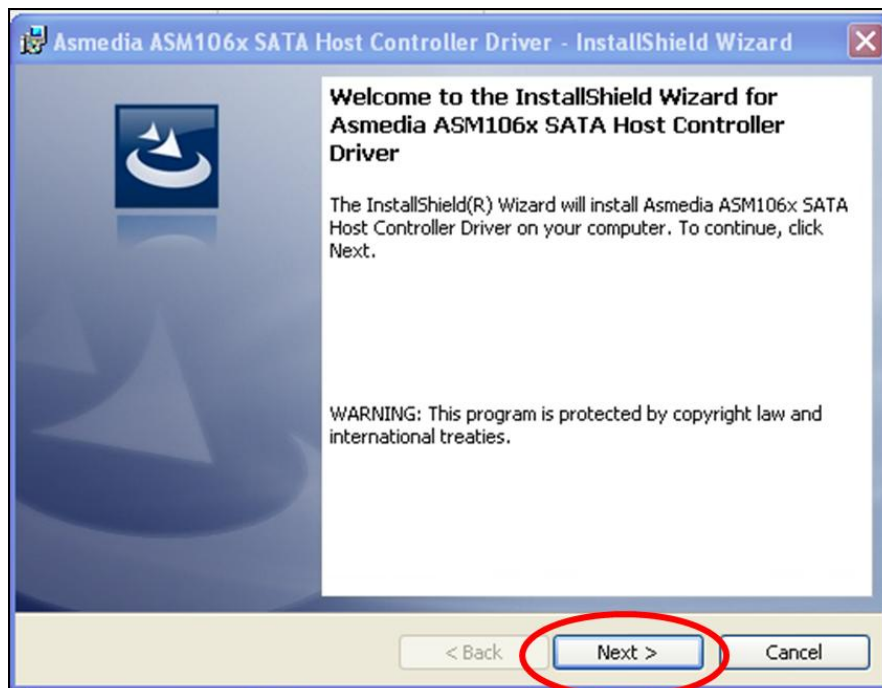
Step 10	**License Agreement**

1. Select "I accept the terms in the license agreement"

2. Click "Next"
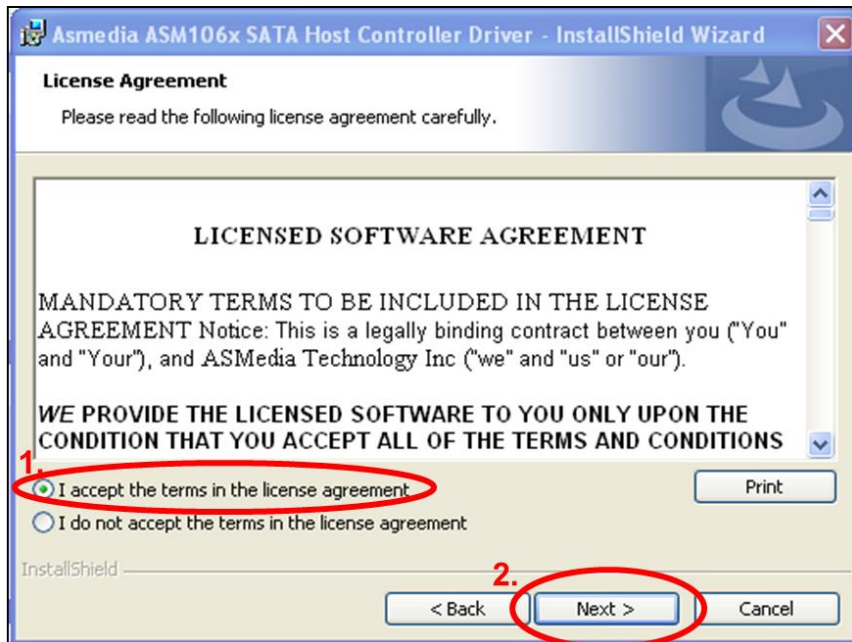
Step 11	**Driver installation in progress**
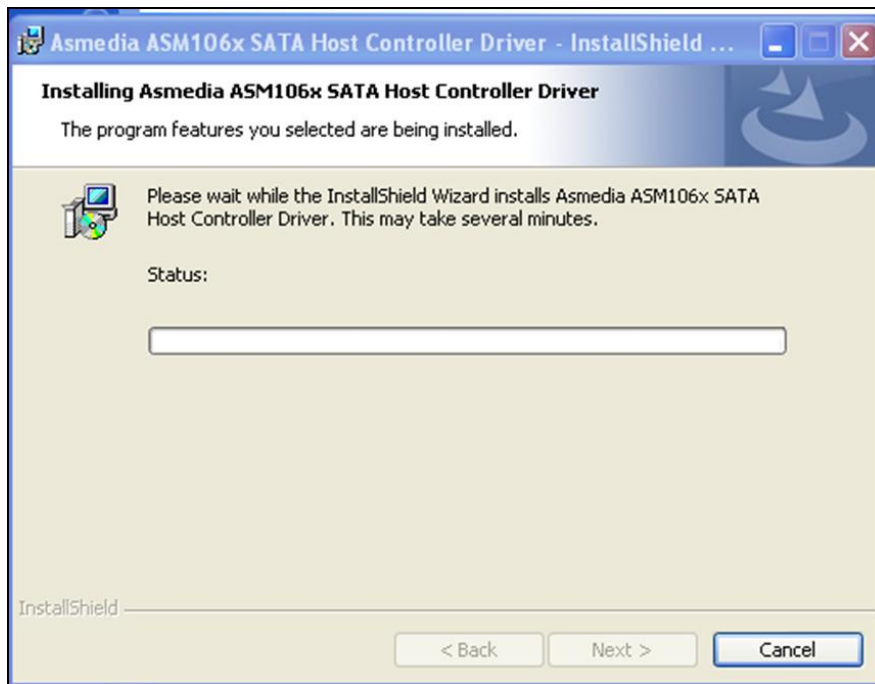
Note	System runs the installation automatically

Step 12   Driver installation completed

Driver installation completed, click "Finish"
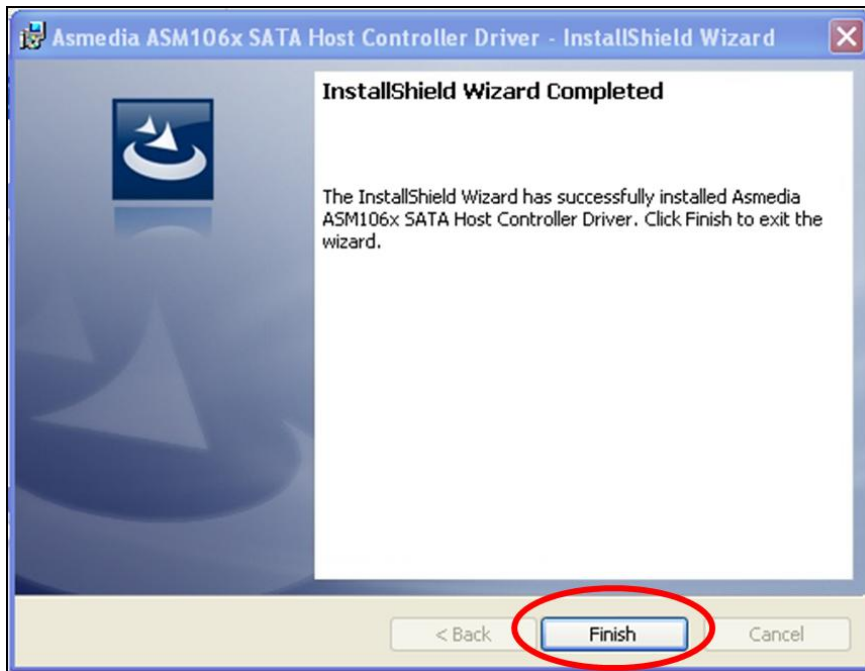
Step 13   Restart Windows

After installation is completed, click "Yes" to restart PC
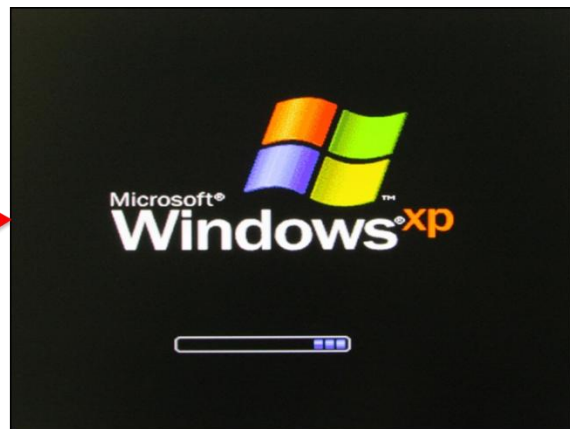
Step 14	**Confirm if driver is installed**

1. Start "Computer Management" program
2. Go to the route:

   My Computer → Manage → Device Manager → SCSI and RAID controllers

3. You would find driver name: Asmedia 106x SATA Controller
4. Device is ready to be used
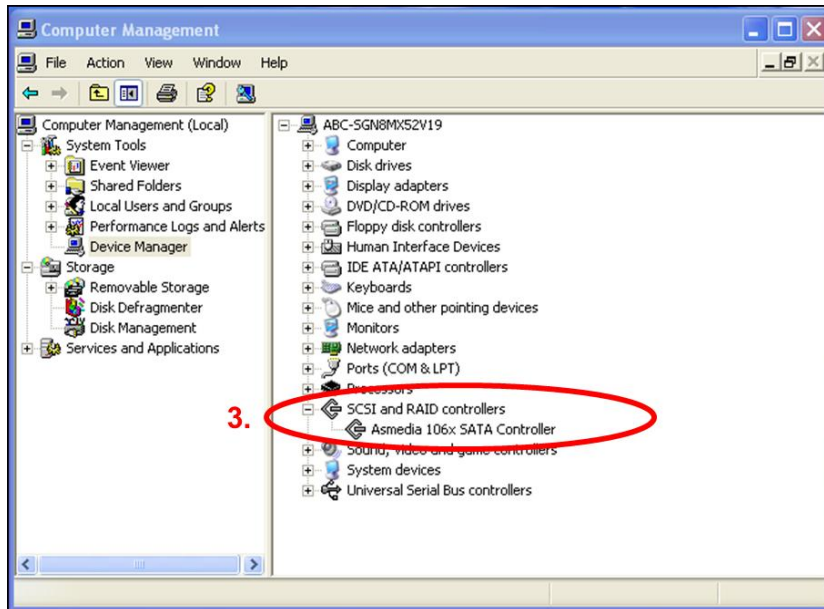
Step 15	**Confirm if SATA device is found**

1. Start "Computer Management" program
2. Go to the route: *My Computer → Manage → Device Manager → Disk drives*
3. You would find the names of SATA devices (Ex. Hitachi HTS….)
4. Device is ready to be used

17
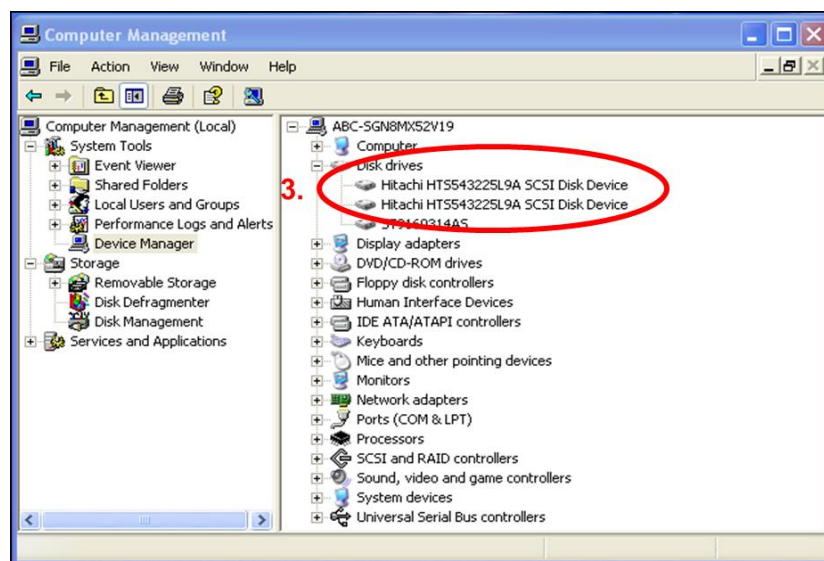
Appendix

❑ Pin Assignments
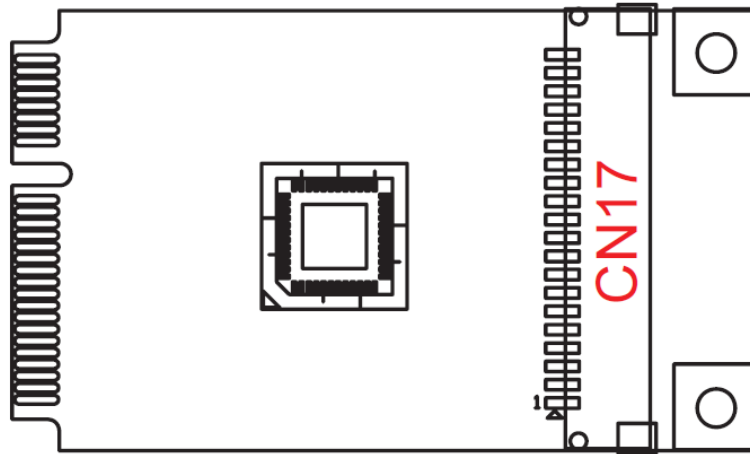
Board Side Pin Assignments

Wire to Board Connector (CN17)

Pin	Description	Pin	Description
1	GND	11	GND
2	Receive_2 +	12	Transmit_1 +
3	Receive_2 -	13	Transmit_1 -
4	GND	14	GND
5	Transmit_2 -	15	Receive_1 -
6	Transmit_2 +	16	Receive_1 +
7	GND	17	GND
8	GND	18	GND
9	SATA LED_2 +	19	SATA LED_1 +
10	SATA LED_2 -	20	SATA LED_1 -

Device Side Pin Assignments

SATA 7 Pin Connector
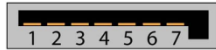
SATA 7 Pin Connector-1		SATA 7 Pin Connector-2	
Pin	Description	Pin	Description
1	GND	1	GND
2	Transmit_1 +	2	Transmit_2 +
3	Transmit_1 -	3	Transmit_2 -
4	GND	4	GND
5	Receive_1 -	5	Receive_2 -
6	Receive_1 +	6	Receive_2 +
7	GND	7	GND

❑ Technical Reference

MEC-SAT-M002 Specifications

General	
PCI-Express Revision	PCI-Express Base Specification Rev 2.0
PCI-Express Electromechanical Revision	PCI-Express Mini Card Electromechanical Rev. 2.0
Hardware	
Controllers	Asmedia ASM1061
Bus	Single-Lane (x1) PCI-Express with throughput up to 5.0/2.5Gbps
Interface (Connector)	
Serial ATA III	2 (SATA)
Performance	
Data Transfer Rate	SATA III transfer rate of 1.5Gbps, 3.0Gbps 6.0Gbps
Driver Support	
Operating Systems	Win 2003, Win XP, Win Vista, Win 7, Win 8
Power Requirement	
Power Consumption	360mA@3.3V
Dimensions	
Width x Length (mm)	30.00 x 50.95
Environmental Limits	
Operating Temperature	-20°C ~ 70°C
Storage Temperature	-20°C ~ 85°C
Humidity	5% ~ 95%
Regulatory Approvals	
EMC	CE, FCC
EMI	EN 55022, EN61000-3-2, EN61000-3-3, FCC Part 15 Subpart B Class B
EMS	En 55024, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11
Reliability	
MTBF	3,055,394 hr
Warranty	3 years

MEC-SAT-M002 Dimensions
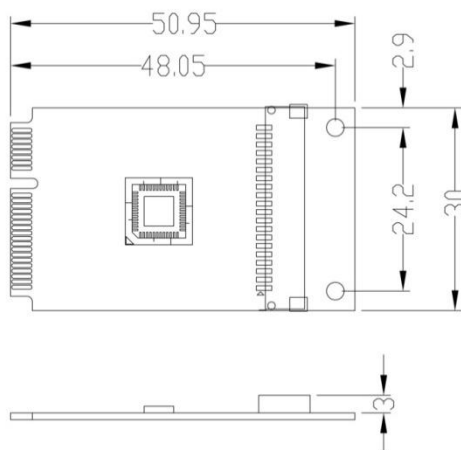
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During the warranty period, we shall, at our option, either repair or replace any product that proves to be defective under normal operation.

Defects, malfunctions, or failures of the warranted product caused by damage resulting from natural disasters (such as by lightening, flood, earthquake, etc.), environmental and atmospheric disturbances, other external forces such as power line disturbances, plugging the board in under power, or incorrect cabling, and damage caused by misuse, abuse, and unauthorized alteration or repair, and the product in question is either software, or an expendable item (such as a fuse, battery, etc.), are not warranted.

RMA Instruction
- Customers must fill in Cervoz Return Merchandise Authorization (RMA) Request Form and obtain a RMA number prior to returning a defective product to Cervoz for service.
- Customers must collect all the information about the problems encountered and note anything abnormal and describe the problems on the "Cervoz Service Form" for the RMA number application process.
- Charges may be incurred for certain repairs. Cervoz will charge for repairs to products whose warranty period has expired. Cervoz will also charge for repairs to products if the damage resulted from acts of God, environmental or atmospheric disturbances, or other external forces through misuse, abuse, or unauthorized alteration or repair. If charges will be incurred for a repair, Cervoz lists all charges, and will wait for customer's approval before performing the repair.
- Customers agree to insure the product or assume the risk of loss or damage during transit, to prepay shipping charges, and to use the original shipping container or equivalent.
- Customers can send back faulty products with or without accessories (manuals, cable, etc.) and any components from the card. If the components were suspected as part of the problems, please note clearly. Otherwise, Cervoz is not responsible for the devices/parts.
- Repaired items will be shipped along with a "Repair Report" detailing the findings and actions taken.

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