MEC-DIS-M002

Mini PCI-e DVI/VGA output graphic board

User's Manual

Third Edition, February 2014

Mini PCI-e Graphic Card

User's Manual

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Introduction

Overview

MEC-DIS-M002 is a graphic 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.

Features

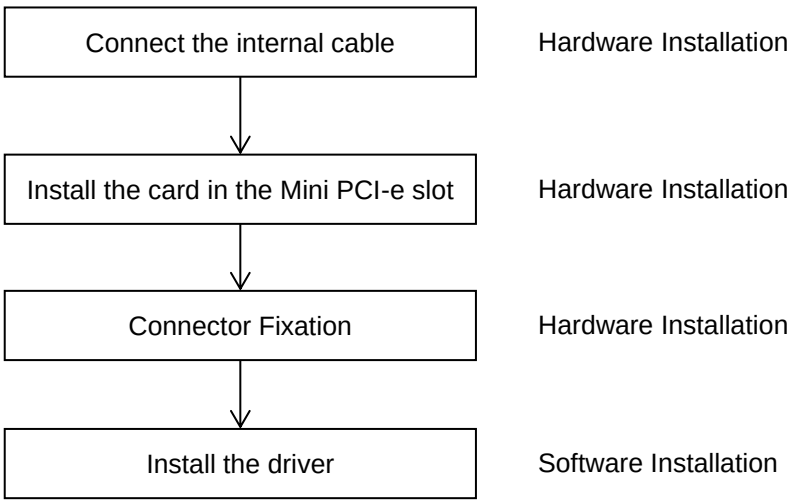
The PCI Express boards have the following outstanding features:

- Single-Lane (x1) PCI-Express with throughput up to 2.5Gbps
- Fully compliant with PCI-Express Base Specification Rev 1.1
- Support simultaneously dual display output
- Industry- Leading 2D acceleration graphic engine
- On board video memory with 16MB DDR SDRAM
- Support 1280 x 1024 @ 60Hz DVI /VGA resolution

Installation Flowchart

Installation Flowchart of MEC-DIS-M002

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



Package Checklist

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

- Mini PCI-e Card x 1
- Daughter board (DVI-I connector) x 1
- Bracket x 1
- M2.5 Screw x 2
- 20Pin Internal Connection Cable (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.*

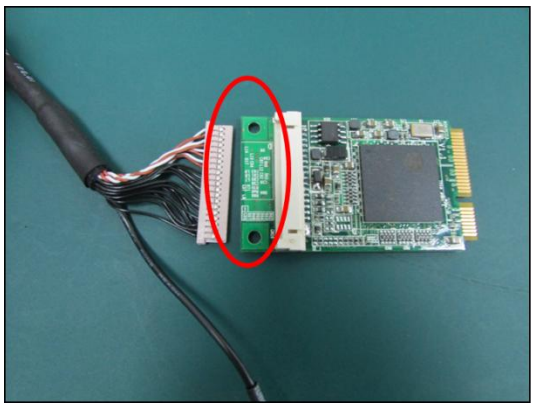
2

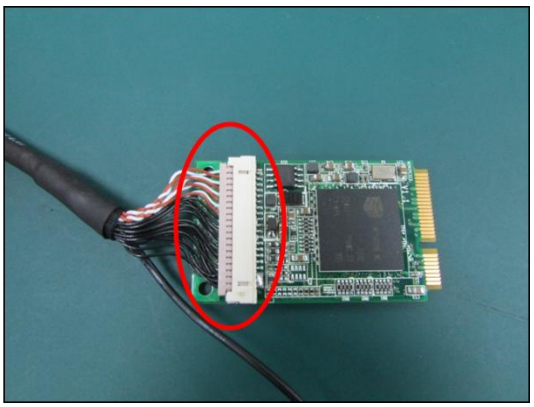
Hardware Installation

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

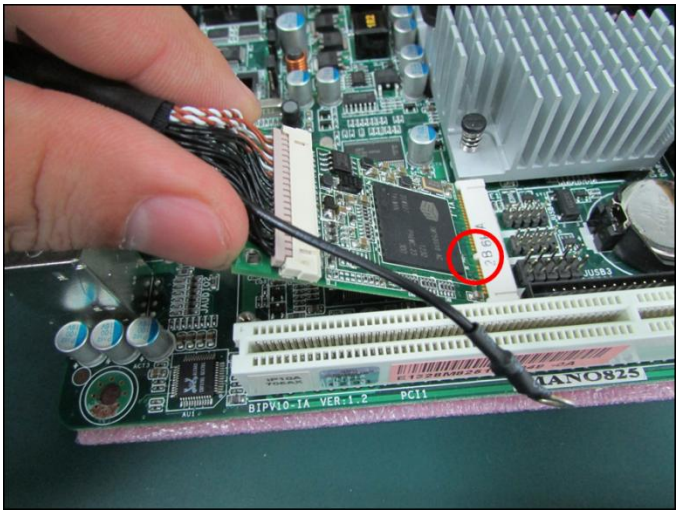
Connect the internal cable to the card





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



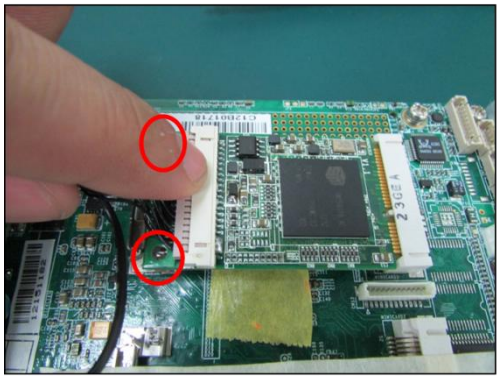
Make sure you install the card in the right position (fool-proof design)

Step 3 Fix the card on the motherboard (clip type or screw type)

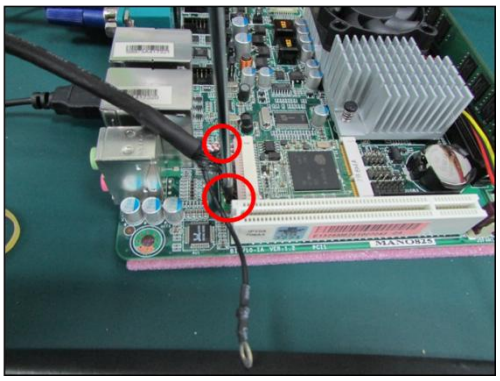
There are 2 options to fix the card. It depends on the design of the motherboard (clip or screw).

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



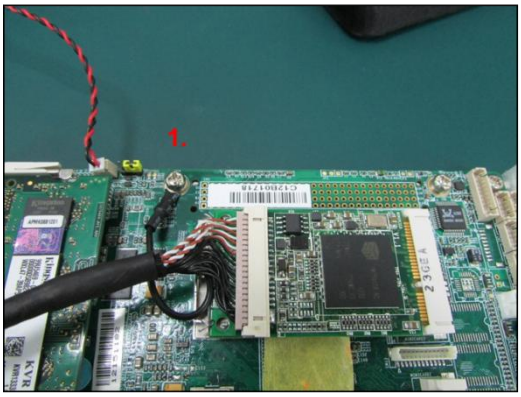
Screw type



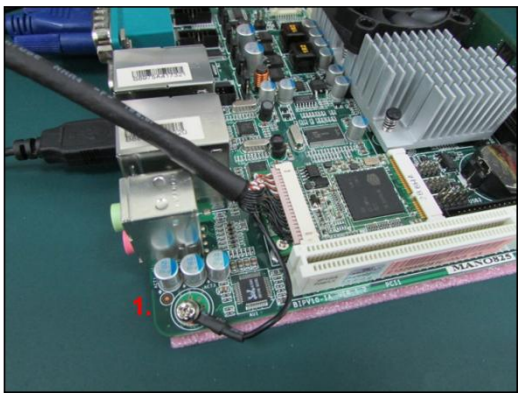
Step 4 Card installation completed

Find any place on mother board that you can screw the ground cable.

Clip type

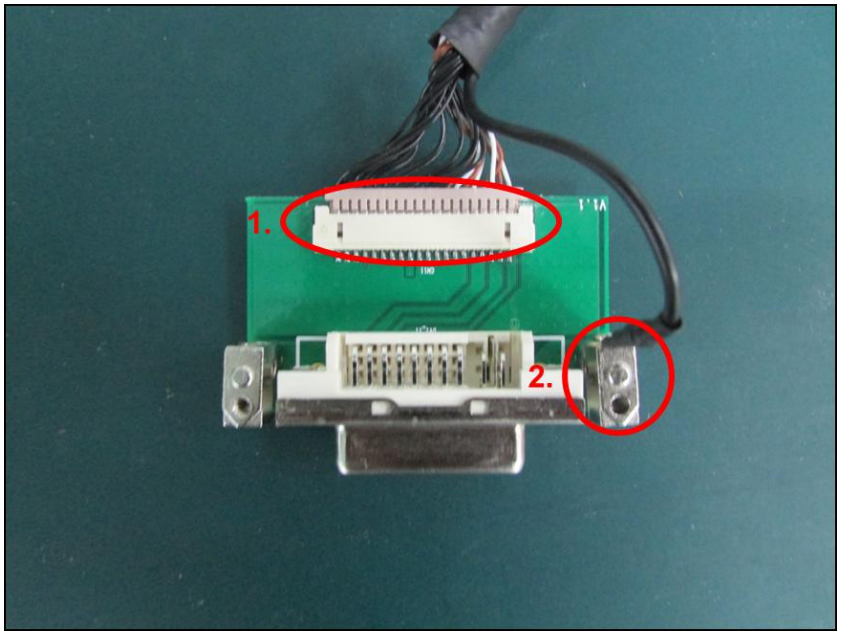


Screw type



Step 5 Connect the cable to the daughter board

1. Connect other side of the cable to the daughter board
2. Connect the ground cable on daughter board or chassis or mother board where you can screw it.



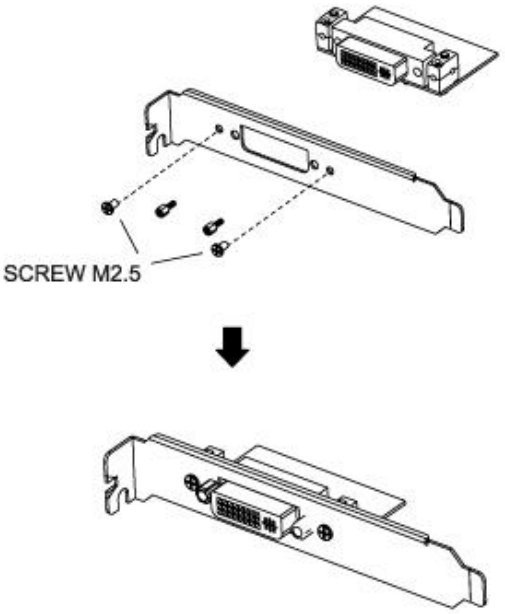
Note	1. Both sides of the cable connectors are the same, it doesn't matter which side you connect 2. Please contact your sales representative if you wish to purchase a DVI+VGA Y-cable

Connector Fixation

MECFIX – Versatile Mounting

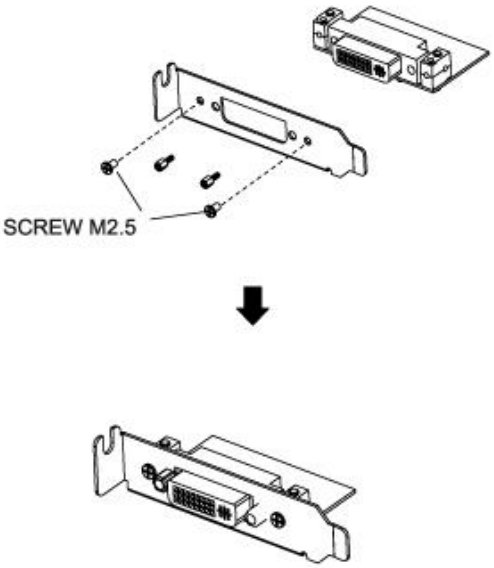
1. Standard PCI/PCIe Bracket

PCI / PCIe IO Bracket



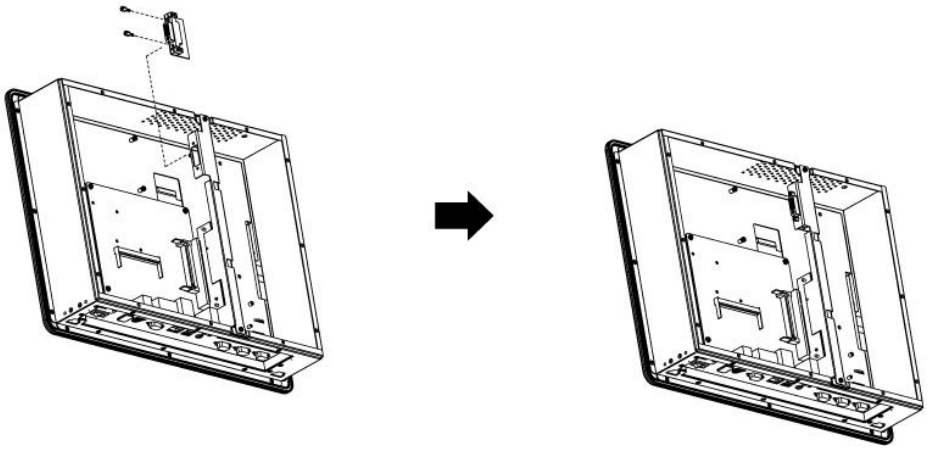
2. Low Profile PCI/PCIe Bracket

Low Profile IO Bracket

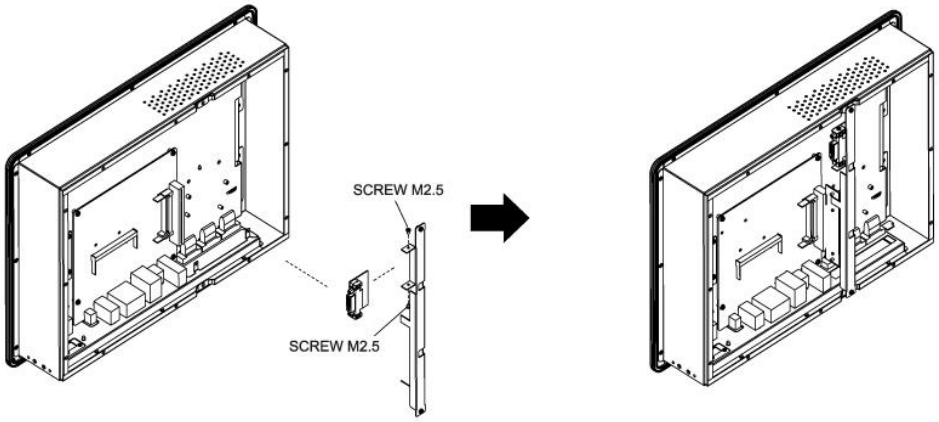


3. Internal Mounting

Upper Fixation – Industrial System

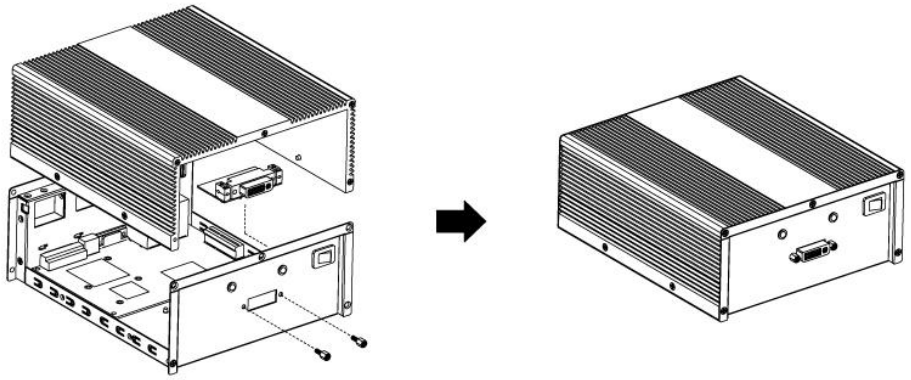


Right & Left Fixation – Industrial System

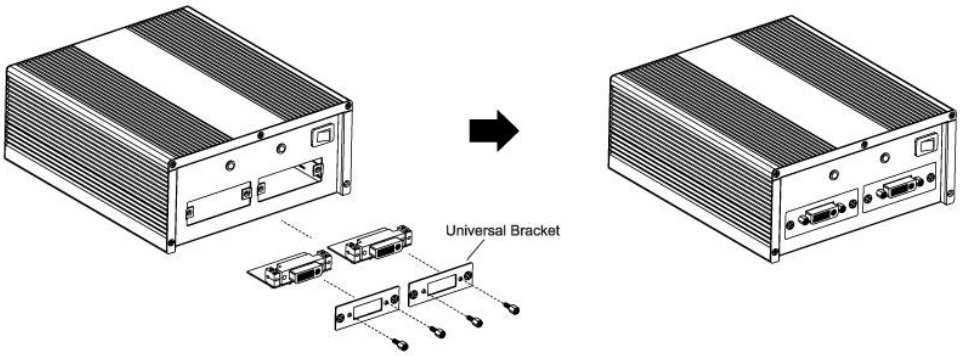


4. Customized Front / Rear Plate

Front / Rear I/O Plate



Universal Bracket



3

Software Installation

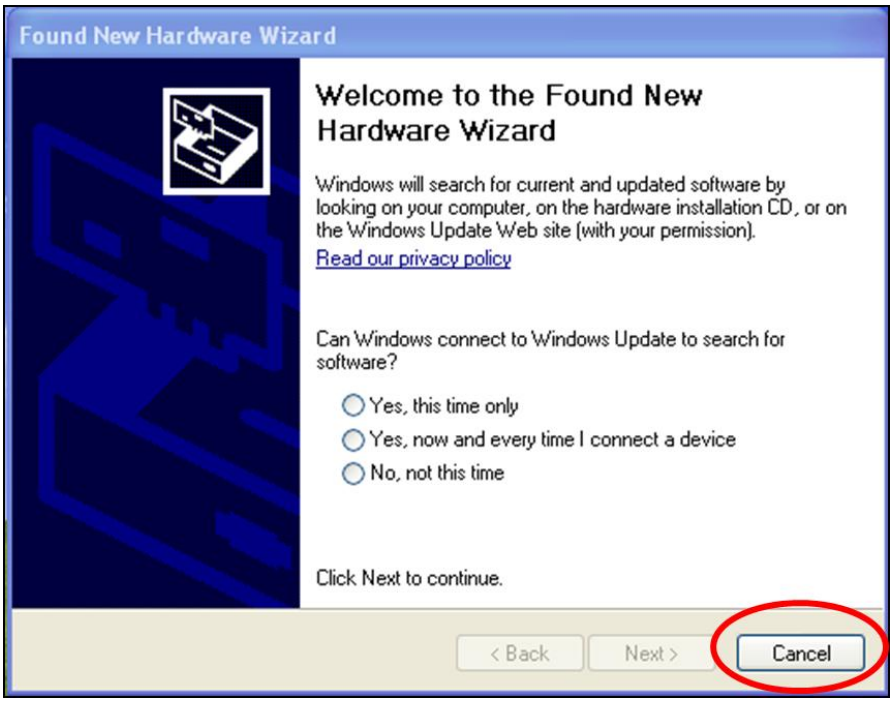
This chapter gives installation, configuration, and update/removal procedures for the driver for Win 2003, Win XP, Win Vista, Win 7, and Win 8.

Step 1	**Turn on PC and start Windows**

Note	XP OS as example

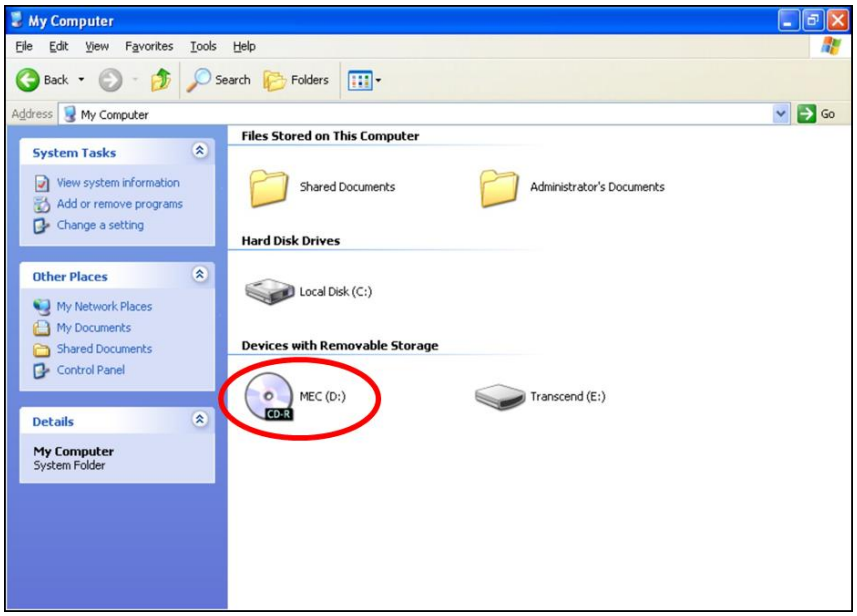
Step 2 Windows automatically detects the new device

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



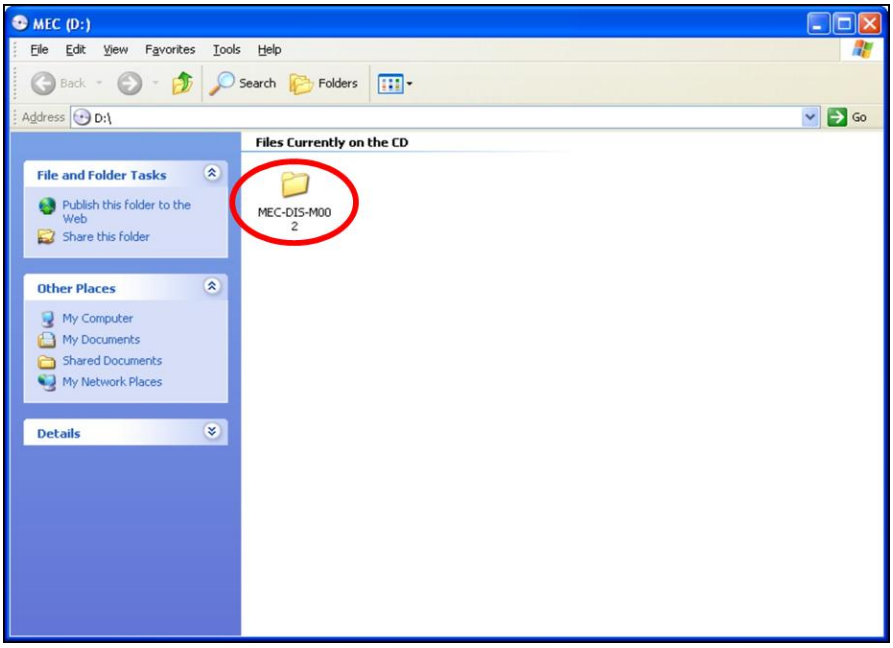
Step 3 Insert CD

Open the CD drive



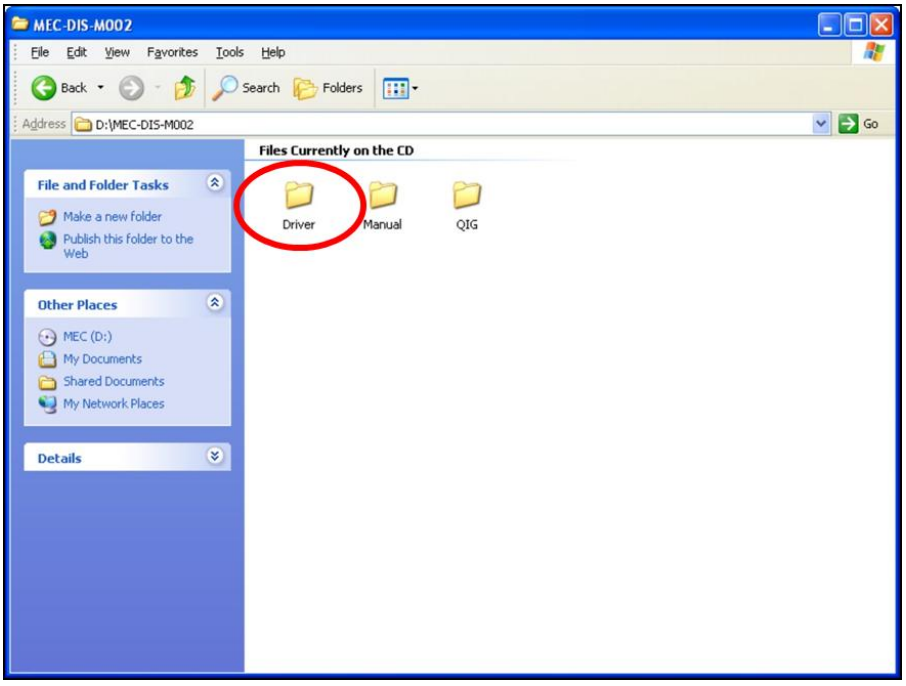
Step 4 Find the “MEC-DIS-M002” folder

Open the “MEC-DIS-M002” file folder



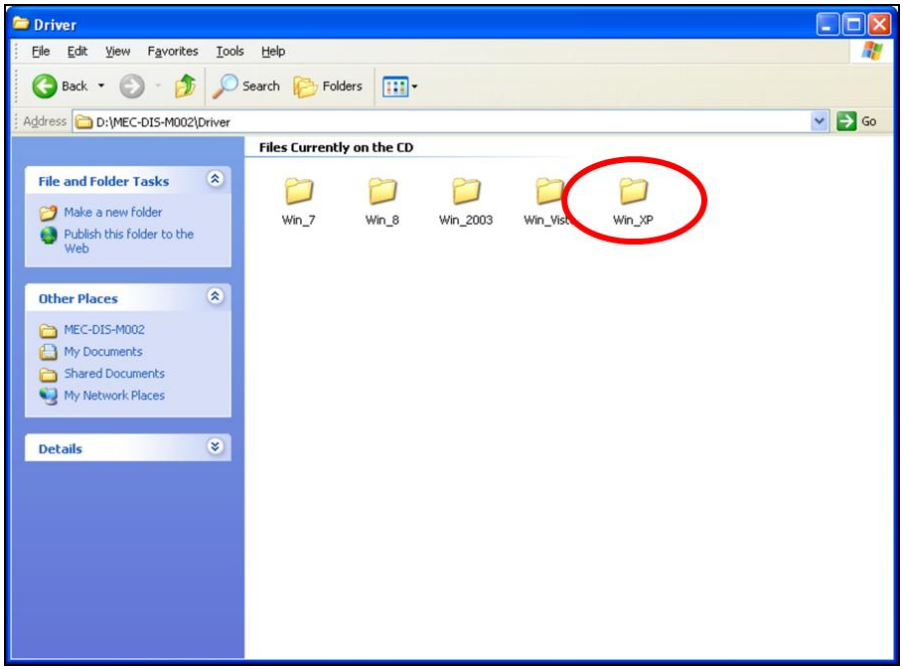
Step 5 Find the “Driver” folder

Open the “Driver” folder



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

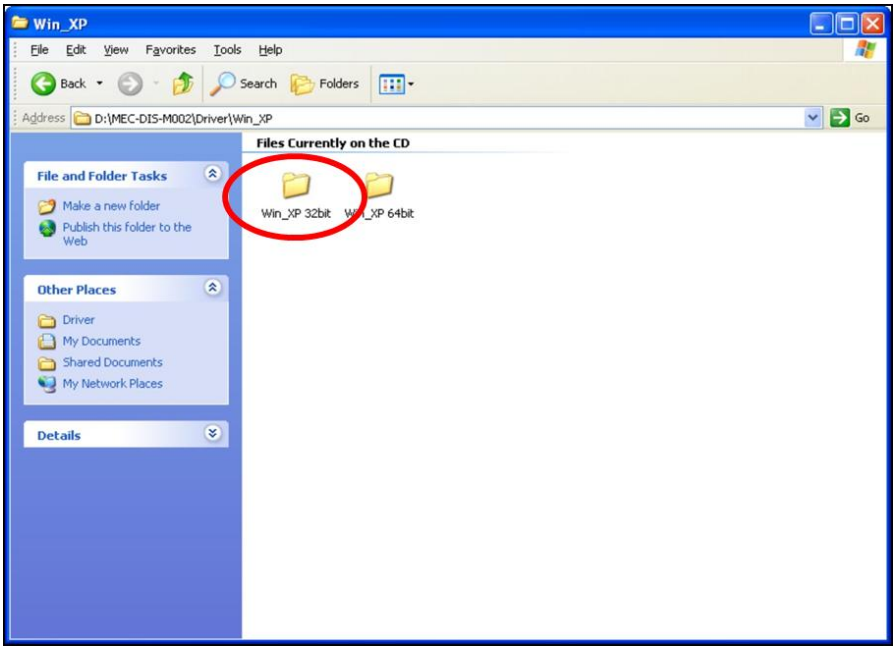
Open the appointed OS folder (We use XP as an example in the above picture)



Make sure you select the correct OS

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

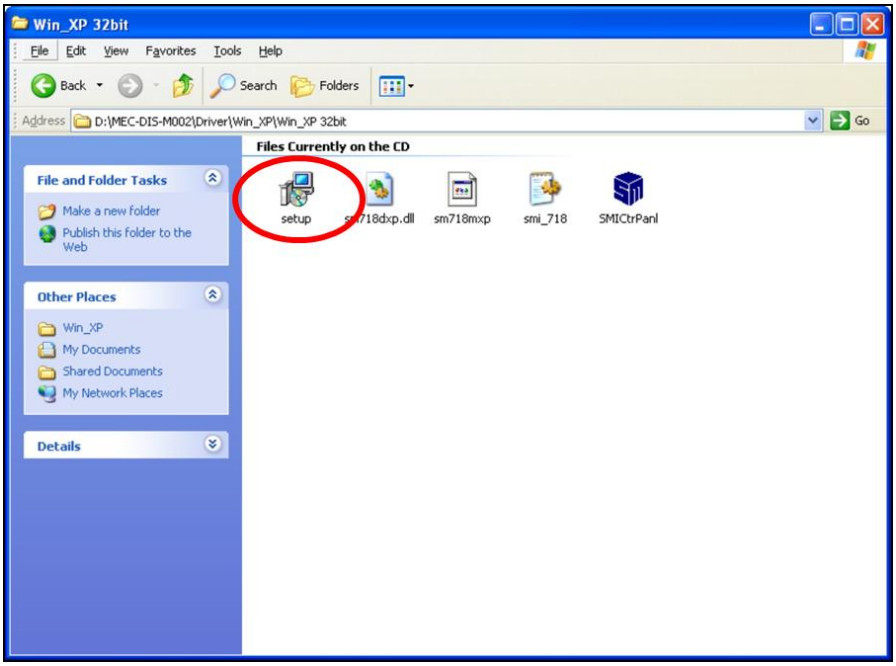
Select appoint OS folder (We use XP 32bit as an example in the above picture)



Make sure you select the correct version of the OS (Ex.: 32-bit or 64-bit)

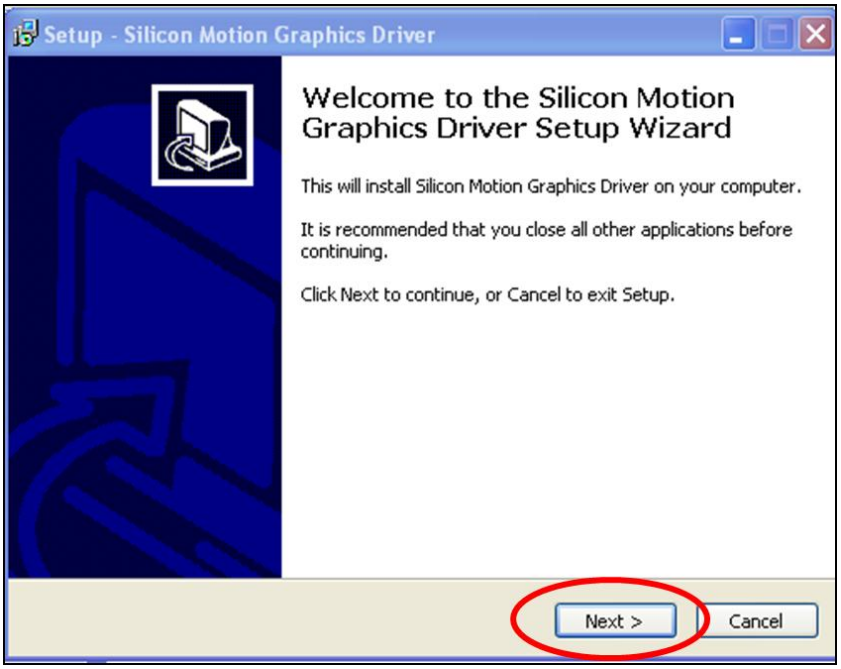
Step 8 Find the “setup” file

Run the “set up” file



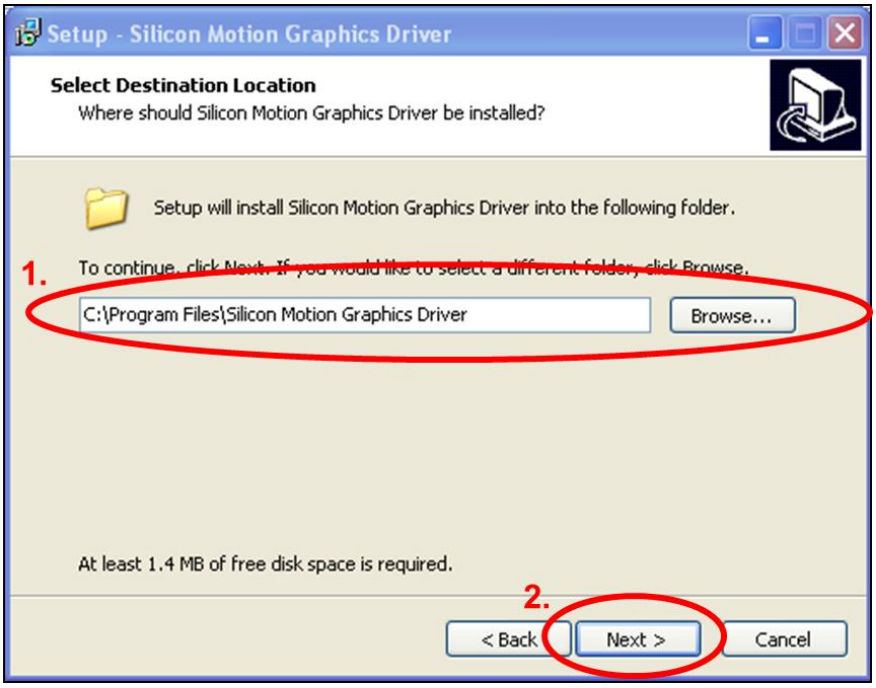
Step 9 Driver installation set up

Click “Next”



Step 10 Select destination location

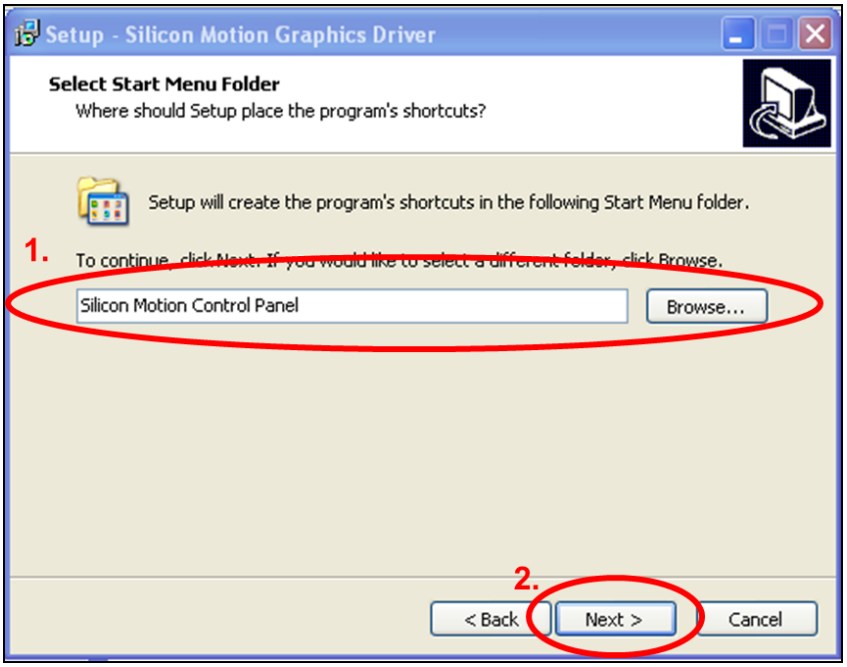
1. Select the location where the driver will be installed
2. Click “Next”



Note	If you are not sure what location to be installed, keep the default setting and click “Next”.

Step 11 Select Start Menu folder

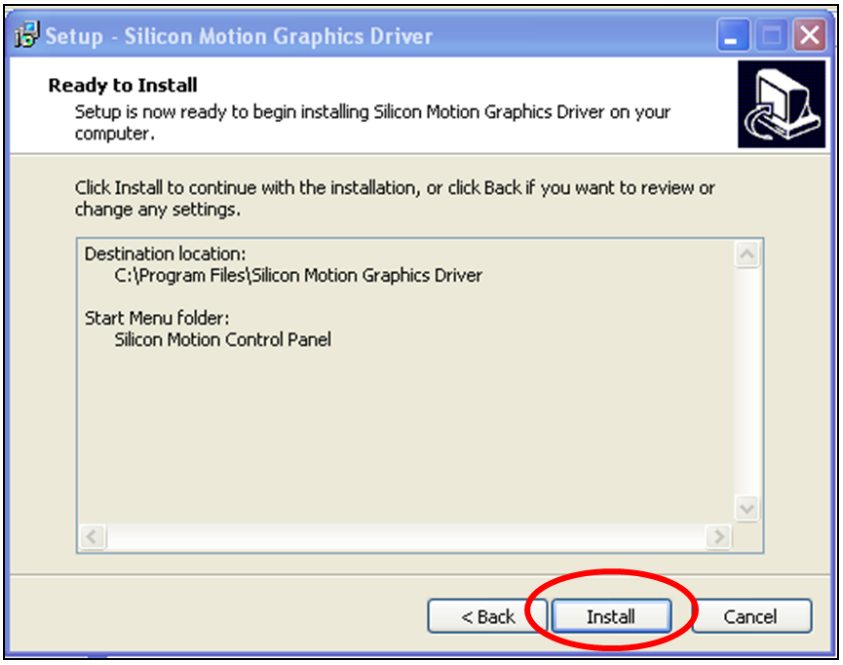
1. Select the start menu folder
2. Click “Next”



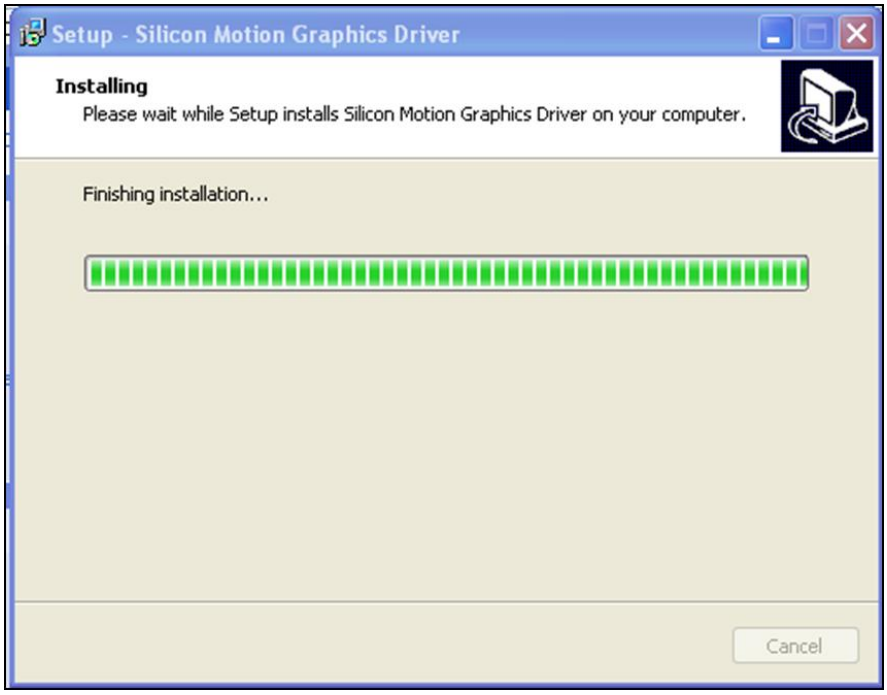
Note	**Note**: If you are not sure what folder to be selected, keep the default setting and click “Next”.

Step 12 Start driver installation

Click ”Install”



Step 13 Installation in progress

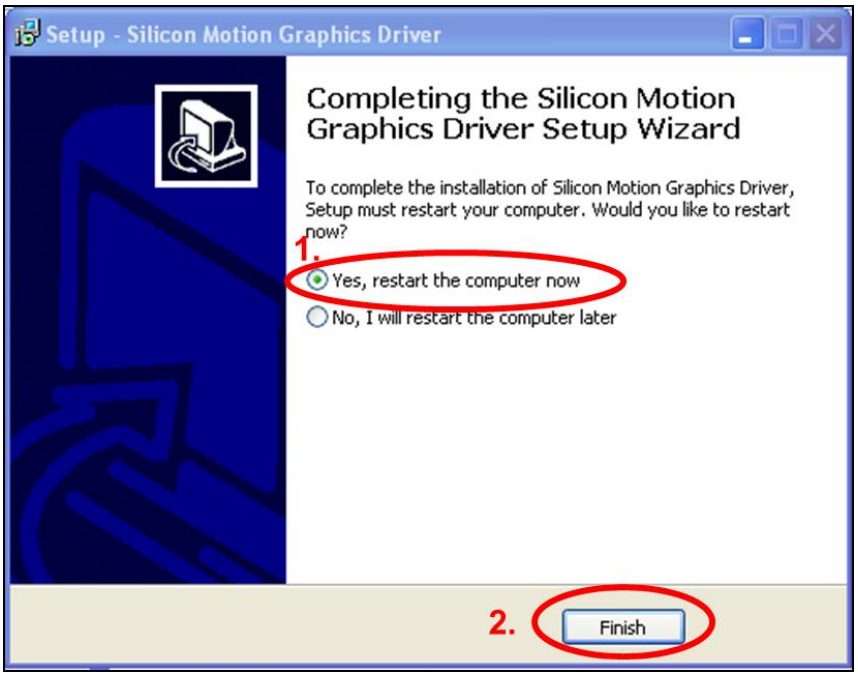


Step 14 Disregard logo testing

1. Before installation is completed, logo testing window would pop out. Disregard this information and continue the installation progress
2. Click “Continue Anyway”

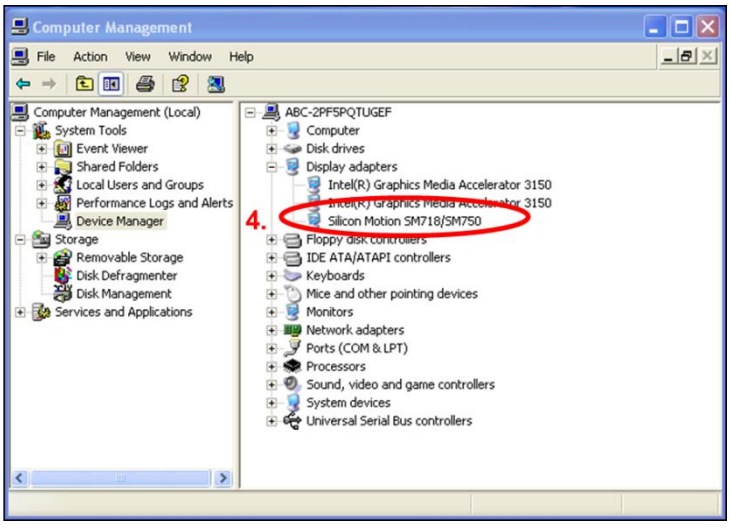
Step 15 Driver installation completed, restart PC

1. Select “Yes, restart the computer now”
2. Click “Finish”



Step 16 Confirm if driver is installed

1. When you restart Windows, you would find the SMI icon on the right bottom corner
2. Start “Computer Management” program
3. Go to the route: *My Computer* → *Manage* → *Device Manager* → *Display adapters*
4. You would find the driver name: Silicon Motion SM718/SM750
5. Device is ready to be used



4

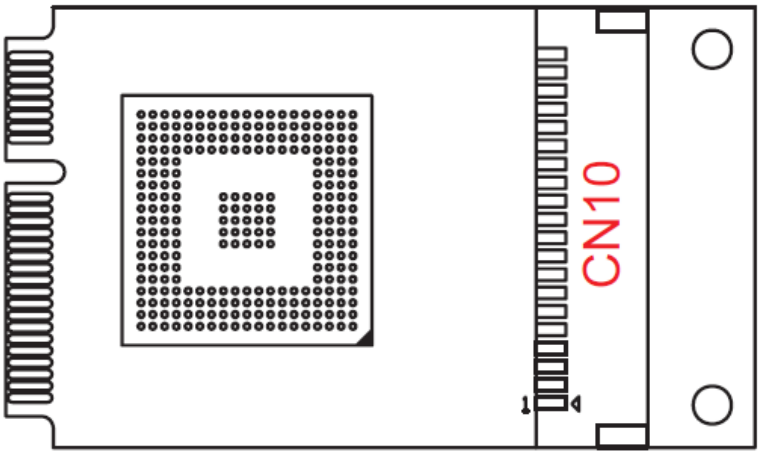
Troubleshooting

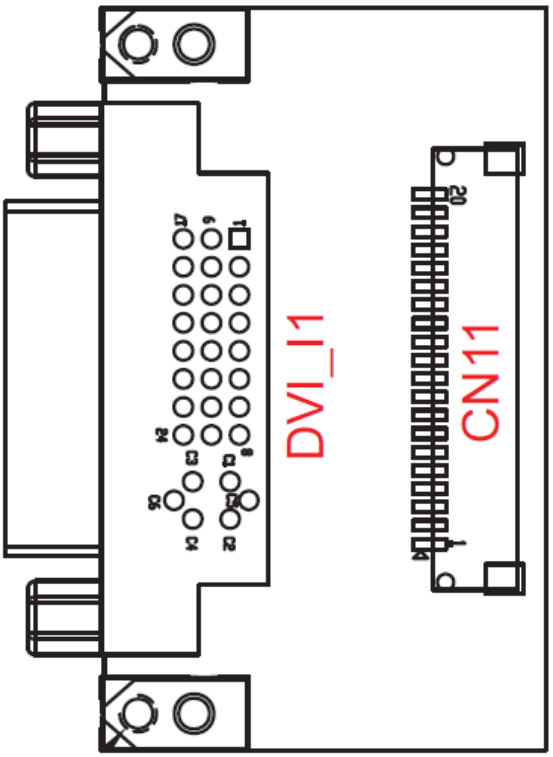
If MEC-DIS-M002 is removed from motherboard, a warning window would pop out stating "No SMI graphics driver to support the control panel!"

No	Causes	Solutions
1	Once MEC-DIS-100 is removed from motherboard, the driver is not able to find the SMI chip.	1. Remove the driver Route: *Control Panel → Add or Remove Programs → Silicon Motion Graphic Driver*

Appendix

❑ Pin Assignments





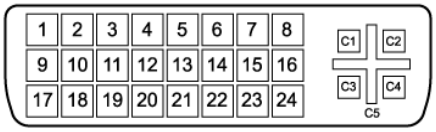
Board Side Pin Assignments

Wire to Board Connector (CN10、CN11)

Pin	Description	Pin	Description
1	TD0+	11	DDC_CLK
2	TD0-	12	+5V
3	TD1+	13	CRT_Red
4	TD1-	14	CRT_Green
5	TD2+	15	CRT_Blue
6	TD2-	16	CRT_HSYNC
7	TC+	17	CRT_VSYNC
8	TC-	18	DDC_SDA
9	DVI_DHP (Hot Plug)	19	DDC_SCL
10	DDC_DAT	20	GND

Device Side Pin Assignments

DVI-I Port Female Connector (DVI_I1)



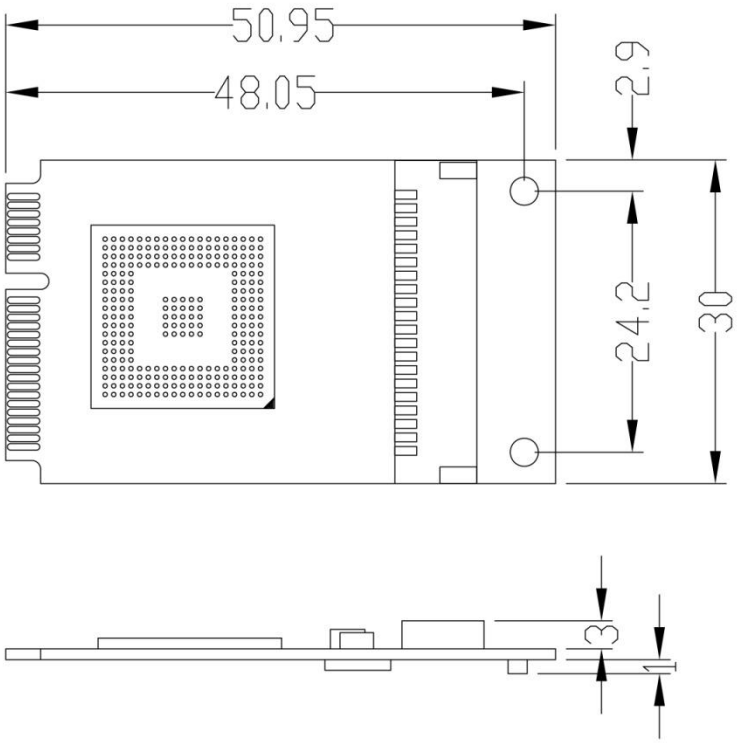
Pin	Description	Pin	Description	Pin	Description
1	TD2-	9	TD1-	17	TD0-
2	TD2+	10	TD1+	18	TD0+
3	GND	11	GND	19	GND
4	N/C	12	N/C	20	N/C
5	N/C	13	N/C	21	N/C
6	DDC_CLK	14	+5V	22	GND
7	DDC_DAT	15	GND	23	TC+
8	CRT-VSYNC	16	DVI_DHP (Hot Plug)	24	TC-
C1	CRT_Red	C2	CRT_Green	C3	CRT_Blue
C4	CRT_HSYNC	C5	GND Return		

❑ Technical Reference

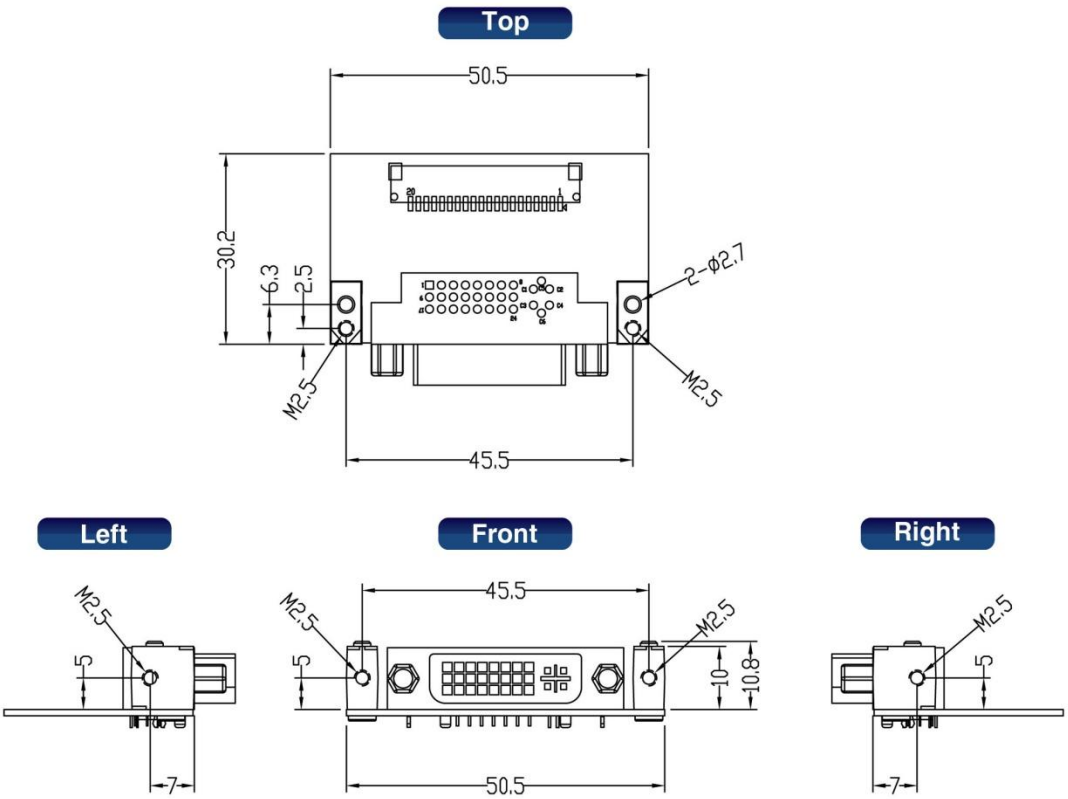
MEC-DIS-M002 Specifications

General	
PCI-Express Revision	PCI-Express Base Specification Rev 1.1
PCI-Express Electromechanical Revision	PCI-Express Mini Card Electromechanical Rev. 1.1
Hardware	
Controllers	SiliconMotion SM750 with 16MB DDR SDRAM
Bus	Single-Lane (x1) PCI-Express with throughput up to 2.5Gbps
Interface (Connector)	
VGA	1 (VGA)
DVI	1 (DVI-D)
Performance	
DVI Resolution	up to 1280 x 1024, 60Hz
VGA Resolution	up to 1280 x 1024, 60Hz
Driver Support	
Operating Systems	Win 2003, Win XP, Win Vista, Win 7, Win 8
Power Requirement	
Power Consumption	740mA@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	1,425,435 hr
Warranty	3 years

MEC-DIS-M002 Dimensions



MEC-DIS-M002 Dimensions



❑ Product Warranty Statement

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http://www.cervoz.com/support/warranty.php
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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