CMI211 System Family

Mini-ITX Standard Systems

User's Manual

Version 1.0
(Apr. 2017)

iBASE

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Copyright

Disclaimer

Trademarks

Compliance

CE

This product has passed CE tests (pre-scan) for environmental specifications and limits. This product is in accordance with the directives of the Union European (EU). If users modify and/or install other devices in this equipment, the CE conformity declaration may no longer apply.

FC

This product has been tested and found to comply with the limits for a Class B (pre-scan) device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications.

WEEE

This product must not be disposed of as normal household waste, in accordance with the EU directive of for waste electrical and electronic equipment (WEEE - 2012/19/EU). Instead, it should be disposed of by returning it to a municipal recycling collection point. Check local regulations for disposal of electronic products.

Green IBASE

This product is compliant with the current RoHS restrictions and prohibits use of the following substances in concentrations exceeding 0.1% by weight (1000 ppm) except for cadmium, limited to 0.01% by weight (100 ppm).

- Lead (Pb)
- Mercury (Hg)
- Cadmium (Cd)
- Hexavalent chromium (Cr6+)
- Polybrominated biphenyls (PBB)
- Polybrominated diphenyl ether (PBDE)

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Important Safety Information

Carefully read the precautions before using the device.

Environmental conditions:

- Lay the device horizontally on a stable and solid surface in case the device may fall, causing serious damage.
- Leave plenty of space around the device and do not block the openings for ventilation. NEVER DROP OR INSERT ANY OBJECTS OF ANY KIND INTO THE VENTIILATION OPENINGS.
- Slots and openings on the chassis are for ventilation. Do not block or cover these openings. Make sure you leave plenty of space around the device for ventilation. NEVER INSERT OBJECTS OF ANY KIND INTO THE VENTILATIN OPENINGS.
- Use this product in environments with ambient temperatures between 0˚C and 45˚C.
- DO NOT LEAVE THIS DEVICE IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20˚C OR ABOVE 80˚C. This could damage the device. The device must be used in a controlled environment.

Care for your IBASE products:

- Before cleaning the device, turn it off and unplug all cables such as power in case a small amount of electrical current may still flow.
- Use neutral cleaning agents or diluted alcohol to clean the device chassis with a cloth. Then wipe the chassis with a dry cloth.
- Vacuum the dust with a computer vacuum cleaner to prevent the air vent or slots from being clogged.

 WARNING

Attention during use:

- Do not use this product near water.
- Do not spill water or any other liquids on your device.
- Do not place heavy objects on the top of the device.
- Operate this device from the type of power indicated on the marking label. If you are not sure of the type of power available, consult your distributor or local power company.
- Do not walk on the power cord or allow anything to rest on it.
- If you use an extension cord, make sure that the total ampere rating of the product plugged into the extension cord does not exceed its limits.

Avoid Disassembly

You are not suggested to disassemble, repair or make any modification to the device. Disassembly, modification, or any attempt at repair could generate hazards and cause damage to the device, even bodily injury or property damage, and will void any warranty.

⚠️ **CAUTION**

Danger of explosion if internal lithium-ion battery is replaced by an incorrect type. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Warranty Policy

- **IBASE standard products:**

  24-month (2-year) warranty from the date of shipment. If the date of shipment cannot be ascertained, the product serial numbers can be used to determine the approximate shipping date.

- **3rd-party parts:**

  12-month (1-year) warranty from delivery for the 3rd-party parts that are not manufactured by IBASE, such as CPU, memory, HDD, power adapter, panel and touchscreen.

✳ PRODUCTS, HOWEVER, THAT FAILS DUE TO MISUSE, ACCIDENT, IMPROPER INSTALLATION OR UNAUTHORIZED REPAIR SHALL BE TREATED AS OUT OF WARRANTY AND CUSTOMERS SHALL BE BILLED FOR REPAIR AND SHIPPING CHARGES.

Technical Support & Services

1. Visit the IBASE website at www.ibase.com.tw to find the latest information about the product.
2. If you need any further assistance from your distributor or sales representative, prepare the following information of your product and elaborate upon the problem.

   - Product model name
   - Product serial number
   - Detailed description of the problem
   - The error messages in text or in screenshots if there is any
   - The arrangement of the peripherals
   - Software in use (such as OS and application software, including the version numbers)

3. If repair service is required, you can download the RMA form at http://www.ibase.com.tw/english/Supports/RMAService/. Fill out the form and contact your distributor or sales representative.

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Chapter 1
General Information

The information provided in this chapter includes:

- Features
- Specifications
- Overview
- Dimensions

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1.1 Introduction

The CMI211 System Family is a chassis applicable to 6 IBASE Mini-ITX motherboards – MI991, MI990, MI985, MI980, MI982 and MI981, and these motherboards feature iSMART that allows the device capable of auto-scheduling for general applications and gives energy savings on power. The system family and the compatible motherboards are listed as below.

Models & Compatible Motherboards:

CMI211-991	CMI211-990	CMI211-985	CMI211-980	CMI211-982	CMI211-981
MI991	MI990	MI985	MI980	MI982	MI981

This system family is able to be operated at the ambient operating temperature ranging from 0 ~ 45 °C, and even from -20 ~ 80 °C for storage.

1.2 Features

- Expandable Mini-ITX system designed for IBASE Mini-ITX motherboards
- Dual memory slot
- Triple channel for display
- Eight USB ports
- Dual LAN
- Audio Jacks
- 2.5" HDD and/or mSATA storage
- PCIe (x16) expansion
- ATX power supply and AC 100 ~ 240V power input

1.3 Specifications – CMI211-991 & CMI211-990

Product Name	CMI211-991		CMI211-990	
System				
Motherboard	MI991AF	MI991EF	MI990VF	MI990EF
CPU	Intel® 6th Gen. Core™ i7/i5/i3 / Pentium® / Celeron® DT Processor		Intel® 6th Gen. Core™ i7/i5/i3 / Pentium® / Celeron® MB Processor	
Chipset	Intel® Q170	Intel® H110	Intel® CM236	Intel® HM170
Memory	2 x DDR4-2133 SO-DIMM, upgradable to 32 GB			
Graphics	Integrated HD graphics			
Super I/O	Fintek F81846AD-I			
Storage	• 2.5" drive bay for HDD • 1 x mSATA			
Audio Codec	Realtek ALC662			
Network (GbE)	Intel® I219LM Intel® I211AT	Intel® I219V Intel® I211AT	Intel® I219LM Intel® I211AT	Intel® I219V Intel® I211AT
Power Supply	Industrial ATX power 250W AC-In 100 ~ 240V Input frequency 47 ~ 63 Hz			
BIOS	AMI BIOS			
Watchdog	Watchdog Timer 256 segments, 0, 1, 2…255 sec/min			
Chassis	SECC black			
Mounting	Desktop or wall mount			
Dimensions (W x H x D)	300 x 72 x 205 mm (11.81" x 2.83" x 8.07")			
Net Weight	3.1 kg (6.83 lb)		2.8 kg (6.17 lb)	
Certificate	CE / LVD / FCC Class B (Pre-scan only)			
Operating System	• Windows 10 (64-bit) / 8.1 (64-bit) / 7 (32-bit / 64-bit) • Linux Ubuntu (64-bit)		• Windows 10 (64-bit) / 8.1 (64-bit) / 7 (64-bit) • Linux Ubuntu (64-bit)	

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Product Name	CMI211-991	CMI211-990
I/O Ports		
Front Panel	2 x USB 2.0	
Rear Panel	• 1 x AC power inlet • 1 x Antenna hole • 2 x COM ports (plus 4 reserved holes) • 1 x DVI-D • 1 x HDMI • 1 x DisplayPort • 6 x USB 3.0 • 2 x RJ45 GbE LAN • 3 x Audio Jack (Line-In, Line-Out, MIC-In)	
Expansion	1 x PCIe (x16) slot * The max. dimensions (W x H x D) for the add-on PCIe card is 111 x 18 x 168 mm (4.37" x 0.7" x 6.61").	
Environment		
Temperature	• **Operating:** 0 ~ 45 °C (32 ~ 113 °F) • **Storage:** -20~ 80 °C (-4 ~ 176 °F)	
Relative Humidity	5 ~ 90% at 45 °C (non-condensing)	
Vibration Protection	• **Operating:** 0.25 Grms / 5 ~ 500 Hz • **Non-operating:** 1 Grms / 5 ~ 500Hz	

All specifications are subject to change without prior notice.

For detailed MB specifications, refer to the respective user manuals on our website.

1.4 Specifications – CMI211-985 & CMI211-980

Product Name	CMI211-985	CMI211-980	
System			
Motherboard	MI985AF	MI980VF	MI980F
CPU	Intel® 5th Gen. Core™ i7/i5/i3 / Pentium® / Celeron® MB Processor	Intel® 4th Gen. Core™ i7/i5/i3 / Pentium® / Celeron® MB Processor	
Chipset	Intel® QM87	Intel® QM87	Intel® HM86
Memory	2 x DDR3L-1600 SO-DIMM, upgradable to 16 GB	2 x DDR3L-1600 SO-DIMM, upgradable to 16 GB	
Graphics	Integrated HD graphics		
Super I/O	Fintek F81866AD-I		
Storage	• 2.5" drive bay for HDD • 1 x mSATA		
Audio Codec	Realtek ALC892		
Network (GbE)	Intel® I218LM Intel® I211AT	Intel® I217LM Intel® I211AT	Intel® I217V Intel® I211AT
Power Supply	Industrial ATX power 250W AC-In 100V ~ 240V Input frequency 47 ~ 63 Hz		
BIOS	AMI BIOS		
Watchdog	Watchdog Timer 256 segments, 0, 1, 2…255 sec/min		
Chassis	SECC black		
Mounting	Desktop or wall mount		
Dimensions (W x H x D)	300 x 72 x 205 mm (11.81" x 2.83" x 8.07")		
Net Weight	2.8 kg (6.17 lb)		
Certificate	CE / LVD / FCC Class B (Pre-scan only)		
Operating System	• Windows 10 (64-bit) / 8.1 (64-bit) / 7 (64-bit) • Linux Ubuntu (64-bit)	• Windows 10 (64-bit) / 8.1 (64-bit) / 7 (32-bit / 64-bit) • Linux Ubuntu (64-bit)	

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Product Name	CMI211-985	CMI211-980
I/O Ports		
Front Panel	2 x USB 2.0	
Rear Panel	1 x AC power inlet 1 x Antenna hole 2 x COM ports (plus 4 reserved holes) 1 x DVI-D 1 x DVI-I 1 x DisplayPort 2 x USB 2.0 4 x USB 3.0 2 x RJ45 GbE LAN 3 x Audio Jack (Line-In, Line-Out, MIC-In)	
Expansion	1 x PCIe (x16) slot * The max. dimensions (W x H x D) for the add-on PCIe card is 111 x 18 x 168 mm (4.37" x 0.7" x 6.61").	
Environment		
Temperature	**Operating:** 0 ~ 45 °C (32 ~ 113 °F) **Storage:** -20~ 80 °C (-4 ~ 176 °F)	
Relative Humidity	5 ~ 90% at 45 °C (non-condensing)	
Vibration Protection	**Operating:** 0.25 Grms / 5 ~ 500 Hz **Non-operating:** 1 Grms / 5 ~ 500Hz	

All specifications are subject to change without prior notice.

For detailed MB specifications, refer to the respective user manuals on our website.

1.5 Specifications – CMI211-982 & CMI211-981

Product Name	CMI211-982	CMI211-981
System		
Motherboard	MI982EF	MI981AF
CPU	Intel® 4th Gen. Core™ i7/i5/i3 / Pentium® / Celeron® DT Processor	
Chipset	Intel® H81 PCH	Intel® Q87 PCH
Memory	2 x DDR3L-1600 SO-DIMM, upgradable to 16 GB	2 x DDR3L-1600 SO-DIMM, upgradable to 16 GB
Graphics	Integrated HD graphics	
Super I/O	Fintek F81866AD-I	
Storage	• 2.5" drive bay for HDD	• 2.5" drive bay for HDD • 1 x mSATA
Audio Codec	Realtek ALC892	
Network (GbE)	Intel® I217LM Intel® I211AT	
Power Supply	Industrial ATX power 250W AC-In 100V ~ 240V Input frequency 47 ~ 63 Hz	
BIOS	AMI BIOS	
Watchdog	Watchdog Timer 256 segments, 0, 1, 2…255 sec/min	
Chassis	SECC black	
Mounting	Desktop or wall mount	
Dimensions (W x H x D)	300 x 72 x 205 mm (11.81" x 2.83" x 8.07")	
Net Weight	3.1 kg (6.83 lb)	
Certificate	CE / LVD / FCC Class B (Pre-scan only)	
Operating System	• Windows 10 (64-bit) / 8.1 (64-bit) / 7 (32-bit / 64-bit) • Linux Ubuntu (64-bit)	

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Product Name	CMI211-982	CMI211-981
I/O Ports		
Front Panel	2 x USB 2.0	
Rear Panel	• 1 x AC power inlet • 1 x Antenna hole • 2 x COM ports (plus 4 reserved holes) • 1 x DVI-D • 1 x VGA • 1 x DisplayPort • 4 x USB 2.0 • 2 x USB 3.0 • 2 x RJ45 GbE LAN • 3 x Audio Jack (Line-In, Line-Out, MIC-In)	• 1 x AC power inlet • 1 x Antenna hole • 2 x COM ports (plus 4 reserved holes) • 1 x DVI-D • 1 x VGA • 1 x DisplayPort • 6 x USB 3.0 • 2 x RJ45 GbE LAN • 3 x Audio Jack (Line-In, Line-Out, MIC-In)
Expansion	1 x PCIe (x16) slot * The max. dimensions (W x H x D) for the add-on PCIe card is 111 x 18 x 168 mm (4.37" x 0.7" x 6.61").	
Environment		
Temperature	• **Operating:** 0 ~ 45 °C (32 ~ 113 °F) • **Storage:** -20~ 80 °C (-4 ~ 176 °F)	
Relative Humidity	5 ~ 90% at 45 °C (non-condensing)	
Vibration Protection	• **Operating:** 0.25 Grms / 5 ~ 500 Hz • **Non-operating:** 1 Grms / 5 ~ 500Hz	

All specifications are subject to change without prior notice.

For detailed MB specifications, refer to the respective user manuals on our website.

1.6 Overview

Oblique View
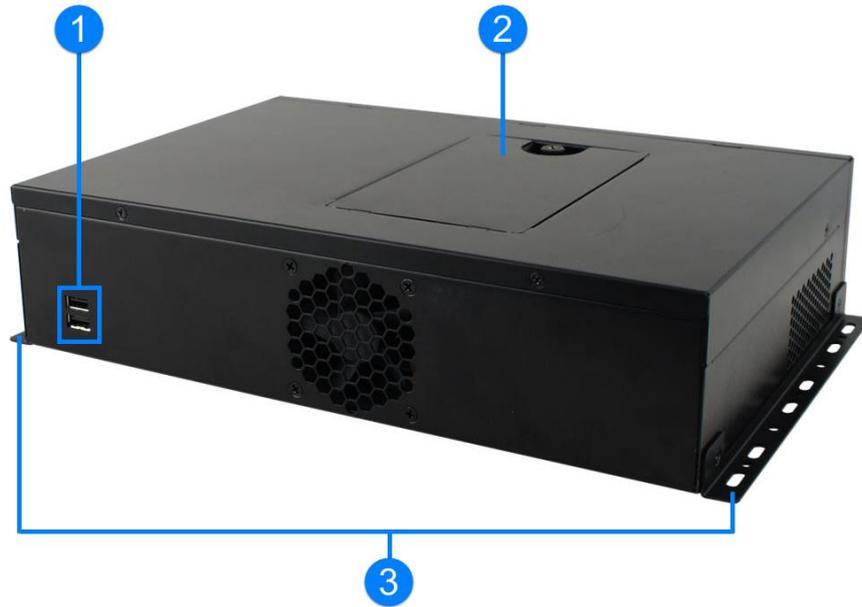
No.	Name	No.	Name
1	USB 2.0 Ports	3	Wall Mount Brackets
2	2.5" HDD Drive Bay		

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Rear View

CMI211-**991** & CMI211-**990**:


| No.	Name	No.	Name
1	Reserved Holes (for COM Ports)	8	Audio Jacks (From top to bottom: Line-In, Line-Out, Mic-In)
2	GbE LAN Ports	9	USB 3.0 Ports
3	LED Indicators for HDD & Power	10	DisplayPort
4	PCIe (x16) Expansion Slot	11	DVI-D Port
5	AC Power Inlet	12	HDMI Port
6	Power Switch	13	COM Ports
7	Antenna Hole		

CMI211-**985** & CMI211-**980**:


No.	Name	No.	Name
1	Reserved Holes (for COM Ports)	8	Audio Jacks (From top to bottom: Line-In, Line-Out, Mic-In)
2	GbE LAN Ports	9	USB 3.0 Ports
3	LED Indicatorss for HDD & Power	10	USB 2.0 Ports
4	PCIe (x16) Expansion Slot	11	DisplayPort
5	AC Power Inlet	12	DVI-I Port
6	Power Switch	13	DVI-D Port
7	Antenna Hole	14	COM Ports

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CMI211-**982**

No.	Name	No.	Name
1	Reserved Holes (for COM Ports)	8	Audio Jacks (From top to bottom: Line-In, Line-Out, Mic-In)
2	GbE LAN Ports	9	USB 3.0 Ports
3	LED Indicatorss for HDD & Power	10	USB 2.0 Ports
4	PCIe (x16) Expansion Slot	11	DisplayPort
5	AC Power Inlet	12	VGA Port
6	Power Switch	13	DVI-D Port
7	Antenna Hole	14	COM Ports

CMI211-**981**:
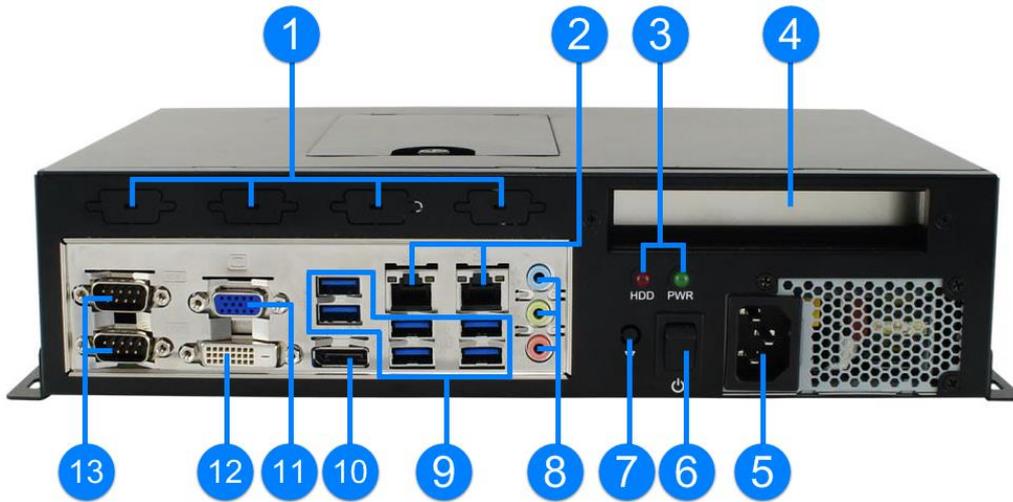
No.	Name	No.	Name
1	Reserved Holes (for COM Ports)	8	Audio Jacks (From top to bottom: Line-In, Line-Out, Mic-In)
2	GbE LAN Ports	9	USB 3.0 Ports
3	LED Indicatorss for HDD & Power	10	DisplayPort
4	PCIe (x16) Expansion Slot	11	VGA Port
5	AC Power Inlet	12	DVI-D Port
6	Power Switch	13	COM Ports
7	Antenna Hole		

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1.7 Dimensions

Unit: mm

CMI211-**991**:
CMI211-**990**:

CMI211-**985**:
CMI211-**980**:

CMI211-**982**:
CMI211-**981**:
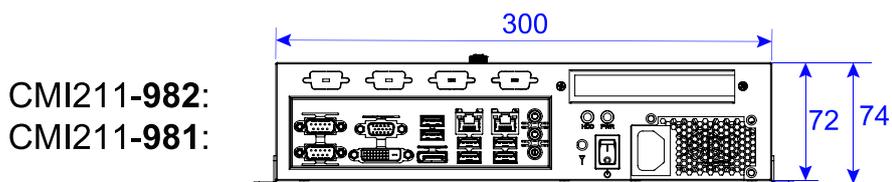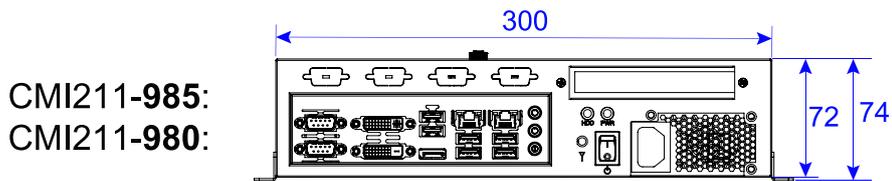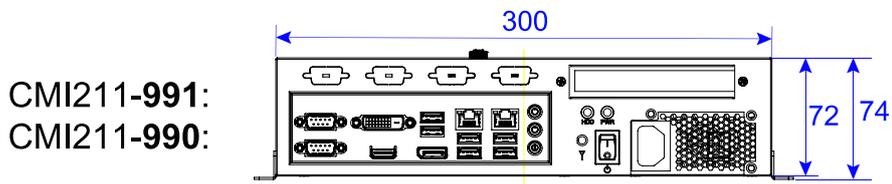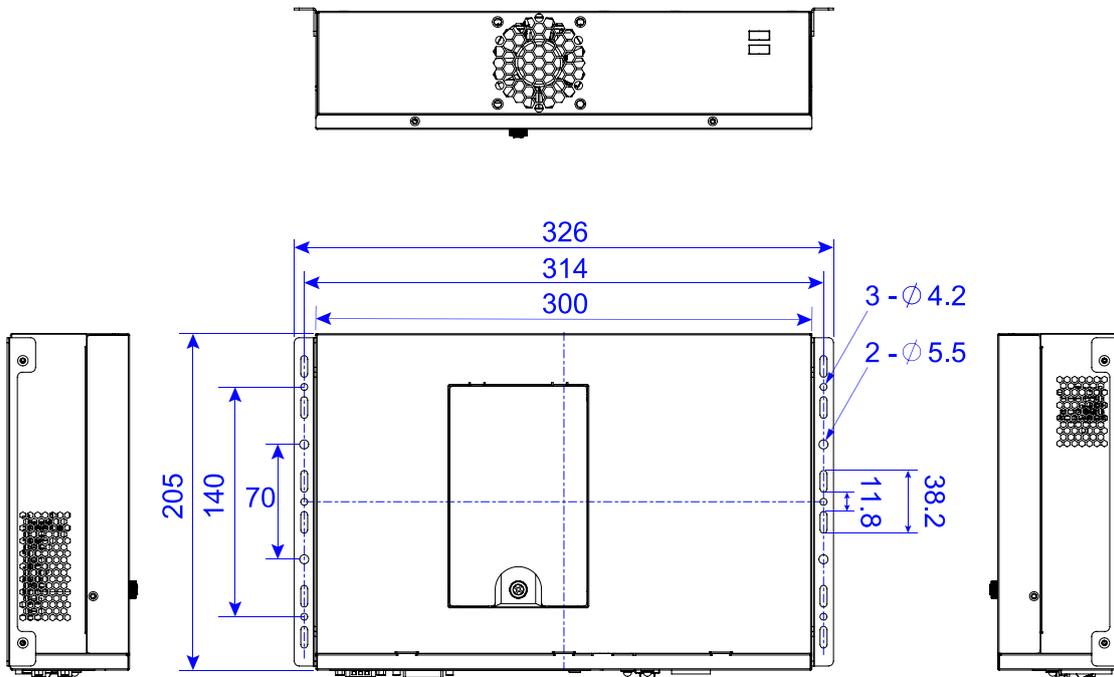
Chapter 2
Hardware Configuration

The information provided in this chapter includes:

- Essential installations before you begin: memory and HDD
- Expansion card, antenna, fan, and wall mount installation

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2.1 Essential Installations Before You Begin

2.1.1 Memory Installation

There are 2 memory slots inside the device. If you need to install or replace a memory module, disassemble the device cover first and then follow the instructions below for installation.

1. Loosen 4 screws from the device cover and remove the cover.
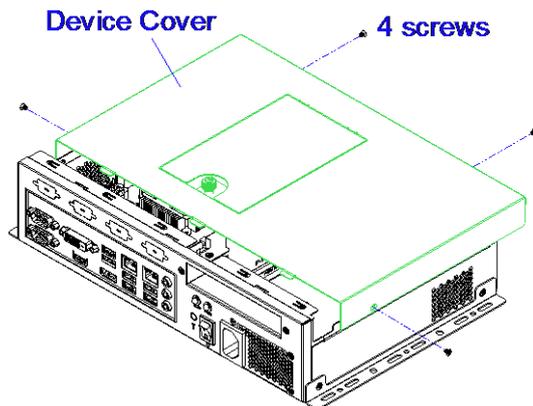
2. Press the ejector tab of the memory slot down and outwards with your fingertips.

3. Hold the memory module and align the key of the module with that on the memory slot.

4. Gently push the module in an upright position until the ejector tabs of the memory slot close to hold the module in place when the module touches the bottom of the slot.
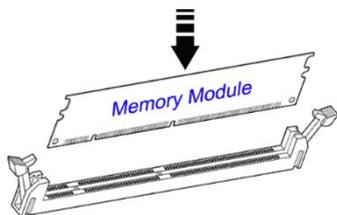

To remove the module, press the ejector tabs outwards with your fingertips to eject the module.

2.1.2   HDD Installation

If you are using a model type of CMI211 System that doesn't include a HDD, you will need to install one. Follow the instructions below for HDD installation or replacement.

1. Loosen the screw from the HDD tray and open the tray up.

Screw for HDD tray
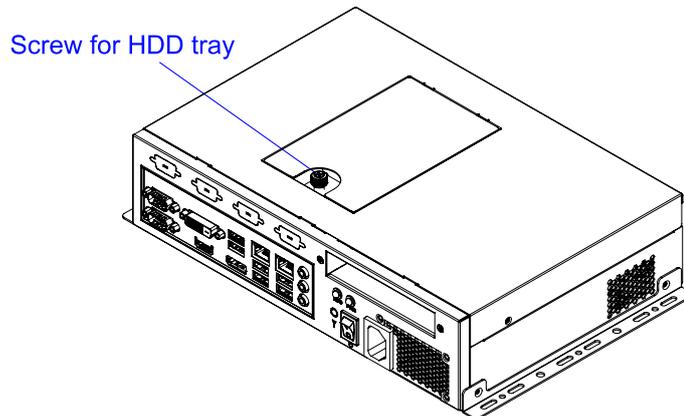
2. Loosen 4 screws, attach your HDD, tighten these screws to fix the HDD and connect the related cables to the motherboard.

HDD tray

4 screws

HDD
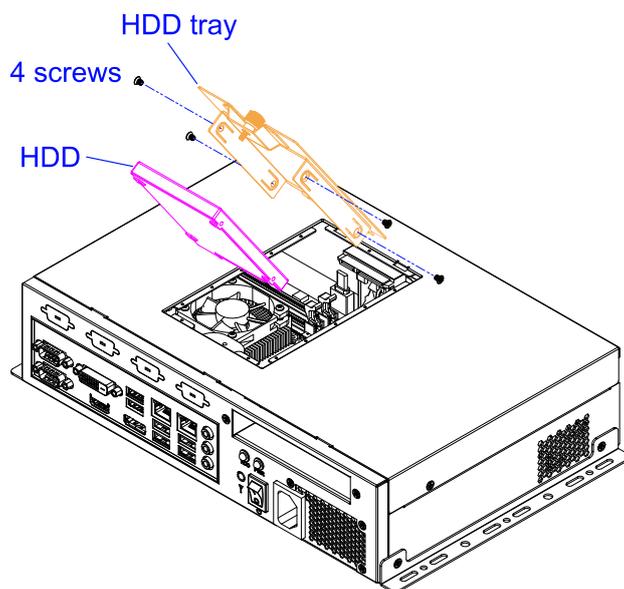
3. Close the tray back and tighten the screw mentioned in Step 1 to secure the HDD tray.

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2.1.3   WiFi / 3G / 4G Antenna Installation

Thread the WiFi / 3G / 4G antenna extension cable through an antenna hole of the front I/O cover and fasten the antenna as shown below. Then apply adhesive to the edge of the hex nut behind the front I/O cover to prevent the extension cable from falling if the cable becomes loose.

1. Thread and fasten the hex nut and the washer. Then install the antenna.
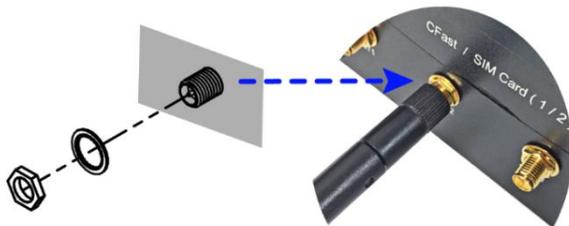
2. Apply adhesive around here.
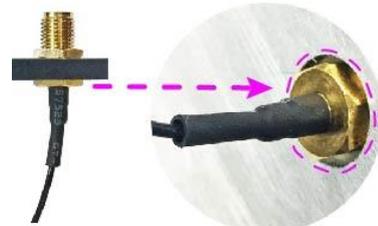
Info: The diameter of the nut is around 6.35 mm (0.25"-36UNC).

2.2 PCIe (x16) Expansion Card Installation

1. Loosen 4 screws from the device cover and remove the cover.
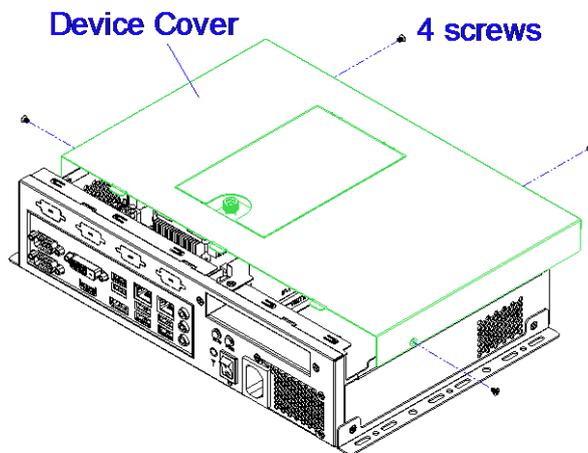
2. Release a screw to take out the expansion slot filler.
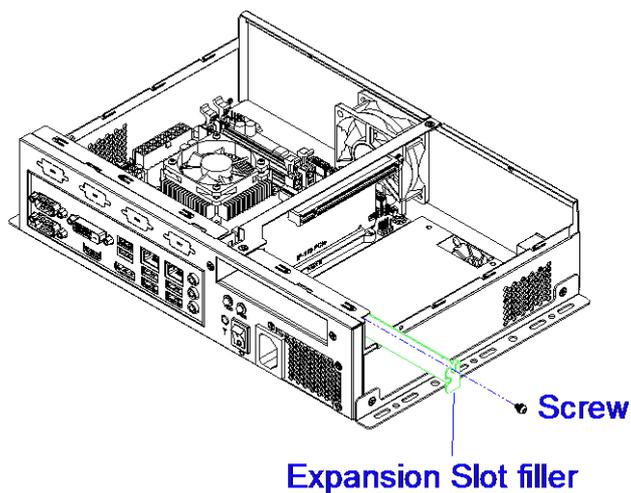
3. Install your PCIe (x16) expansion card and fix the card by tightening the screw mentioned above.

After installation, tighten 4 screws mentioned in Step 1 to secure the device cover.

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2.3 Fan Replacement

1. Loosen 4 screws from the device cover and remove the cover.
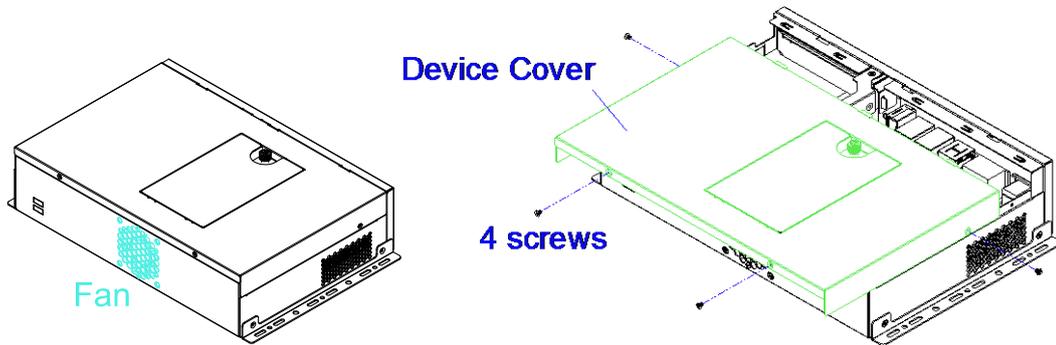
2. Release 4 screws for a fan for replacement and tighten the screws after installation.
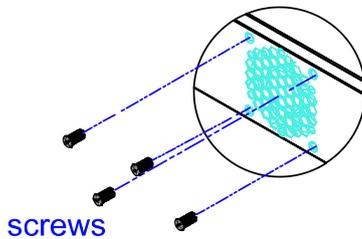
After installation, tighten 6 screws mentioned in Step 1 to secure the device cover.

2.4 Mounting Brackets Installation

Note: Before mounting the system on wall, ensure that you are following all applicable building and electric codes.

Requirements

When mounting, ensure that you have enough room for power and signal cable routing. And have good ventilation for power adapter. The method of mounting must be able to support weight of the CMI211 System plus the suspend weight of all the cables to be attached to the system. Use the following methods for mounting your system:

Selecting the Location

Plan the mounting location thoroughly. Locations such as walkway areas, hallways, and crowded areas are not recommended. Mount the product to a flat, sturdy, structurally sound column or wall surface.

The best mounting surface is a standard countertop, cabinet, table, or other structure that is minimally the width and length of the product. This will reduce the risk that someone may accidentally wall into and damage the product. Local laws governing the safety of individuals might require this type of consideration.

Selecting the type of wall construction

1. Mounting on a hollow wall

   - **Wood surface**
     Use construction-grade wood and the recommended minimum thickness is 38 x 25.4 mm (1.5" x 10").

     Note: This method provides the most reliable attachment for the product with little risk that the product may come loose or require ongoing maintenance.

   - **Drywall**
     Drywall over wood studs is acceptable.

2. Mounting on a solid concrete or brick wall with flat and smooth surface

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Wall Mount Installation instructions:

1. Attach the mounting brackets to your CMI211 System, and secure with the supplied four screws as below.
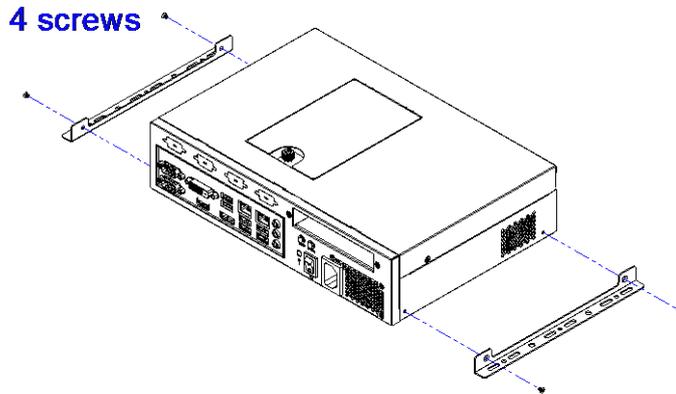
4 screws

2. Then prepare at least four screws (M3, 6 mm) to mount the device on wall .

4 screws
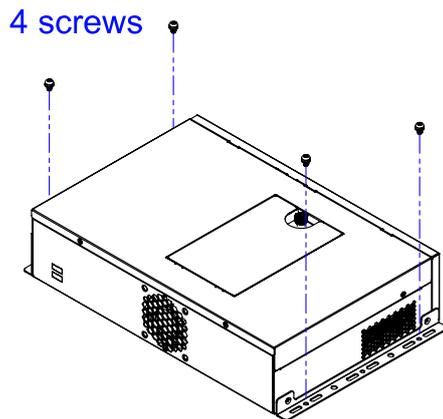
You can install CMI211 System on plastic (LCD monitor), wood, drywall surface over studs, or a solid concrete or metal plane directly. The types of fasteners required are dependent on the type of wall construction.

Fasteners are not supplied in the product package. You will need to prepare the fasteners. Choose fasteners that are rated either **Medium Duty** or **Heavy Duty**. To assure proper fastener selection and installation, follow the fastener manufacturer's recommendations.