USER MANUAL

AMOS-3005

Ultra-compact fanless system for embedded industrial applications

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FCC-A Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his personal expense.

Notice 1

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Notice 2

Shielded interface cables and A.C. power cord, if any, must be used in order to comply with the emission limits.

Notice 3

The product described in this document is designed for general use, VIA Technologies assumes no responsibility for the conflicts or damages arising from incompatibility of the product. Check compatibility issue with your local sales representatives before placing an order.

Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

Battery Recycling and Disposal

- ☐ Only use the appropriate battery specified for this product.
- ☐ Do not re-use, recharge, or reheat an old battery.
- ☐ Do not attempt to force open the battery.
- ☐ Do not discard used batteries with regular trash.
- ☐ Discard used batteries according to local regulations.

Safety Precautions

- ☐ Always read the safety instructions carefully.
- ☐ Keep this User's Manual for future reference.
- ☐ All cautions and warnings on the equipment should be noted.
- ☐ Keep this equipment away from humidity.
- ☐ Lay this equipment on a reliable flat surface before setting it up.
- ☐ Make sure the voltage of the power source and adjust properly 110/220V before connecting the equipment to the power inlet.
- ☐ Place the power cord in such a way that people cannot step on it.
- ☐ Always unplug the power cord before inserting any add-on card or module.
- ☐ If any of the following situations arises, get the equipment checked by authorized service personnel:
  - The power cord or plug is damaged.
  - Liquid has penetrated into the equipment.
  - The equipment has been exposed to moisture.
  - The equipment has not worked well or you cannot get it work according to User's Manual.
  - The equipment has dropped and damaged.
  - The equipment has obvious sign of breakage.
- ☐ Do not leave this equipment in an environment unconditioned or in a storage temperature above 70°C (158°F). The equipment may be damaged.
- ☐ Do not leave this equipment in direct sunlight.
- ☐ Never pour any liquid into the opening. Liquid can cause damage or electrical shock.
- ☐ Do not place anything over the power cord.
- ☐ Do not cover the ventilation holes. The openings on the enclosure protect the equipment from overheating

Box Contents

AMOS-3005-1Q12A1

- ☐ 1 x AMOS-3005 system
- ☐ 1 x Phoenix plug to DC jack
- ☐ 1 x Screw pack for miniPCIe module
- ☐ 1 x Rubber feet pack for desktop mounting
- ☐ 1 x Thermal pad for mSATA module
- ☐ 1 x Thermal grease (0.5cc syringe)
- ☐ 1 x Screw pack for mounting

Ordering Information

Part Number	Description
AMOS-3005-1Q12A1	Fanless Embedded System with 1.2GHz VIA Eden® X4 processor, HDMI, VGA, 2 x USB 3.0, 2 x Lockable USB 2.0, 2 x Gigabit Ethernet, 2 x COM, DIO, 2 x Audio jacks, and 9V~36V DC-in

Optional Accessories

External AC-to-DC Adapter and Power Cord

Part Number	Description
99G63-020316	AC-to-DC adapter, 2-pole Phoenix connector, DC 12V/5A, 60W
99G33-02032C	Power cord, 180cm, USA type
99G33-02033C	Power cord, 180cm, Europe type
99G33-02034C	Power cord with PSE mark, 180cm for Japan market

Wireless Modules

Part Number	Description
EMIO-1533-00A2	VNT9271 IEEE 802.11 b/g/n USB Wi-Fi module with assembly kit
EMIO-1541-00A1	VNT9485 IEEE 802.11 b/g/n miniPCIe Wi-Fi module with assembly kit and antenna
EMIO-2550-00A1	3.75G HSPA/UMTS mobile broadband full size miniPCIe module with GPS and SIM card slot

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1. Product Overview

The AMOS-3005 industrial system is an ultra-compact design for various industrial and embedded applications such as automation, Human Machine Interface, transportation, energy management and etc. The AMOS-3005 is based on the EITX form factor, and powered by high performance 1.2GHz VIA Eden® X4 processor.

A completely fanless system, the AMOS-3005 features a ruggedized and qualified thermal performance design that is able to withstand a wide operating temperature range, and makes it ideal for extreme operating environment. The system's housing is made of a heavy-duty steel body chassis and a robust aluminum alloy top cover that provides high stability which can withstand shock and vibration.

The AMOS-3005 has multiple I/O and connectivity features such as the VGA and HDMI ports that enable dual independent displays, two Gigabit Ethernet ports, two lockable USB 2.0 ports, two USB 3.0 ports, two configurable COM ports (with 5V/12V selector), and DIO port. In addition, it supports one DDR3 1333 SODIMM slot (supports up to 8GB of memory), onboard SIM card slot, mSATA, slot for mSATA storage drive and miniPCIe slot for 3G/GPS/Wi-Fi connectivity. An optional Wi-Fi (WLAN) connectivity is also available which can be supported through onboard USB Wi-Fi connector.

1.1. Key Features

1.1.1. Powered by VIA Eden® X4 Processor

The VIA Eden X4 processor is a 64-bit superscalar x86 quad core processor packed into an ultra-compact NanoBGA2 package. The VIA Eden X4 processor delivers a superb performance on multi-tasking, multimedia, playback, productivity, internet browsing in a lower power budget that makes it ideal for embedded system application.

1.1.2. Fanless and Ruggedized Chassis Design

The AMOS-3005 features fanless operation. It has a ruggedized, compact heavy-duty steel and aluminum alloy chassis that does double duty as a thermal solution. It is designed to ensure maximum reliability and stability that makes it suitable to install in critical environment.

1.1.3. Networking Support

The AMOS-3005 is equipped with two RJ-45 ports that support high speed Gigabit Ethernet. Its wireless networking options give the system a freedom of 3G, GPS and Wi-Fi through miniPCIe slot, and onboard USB Wi-Fi connector for Wi-Fi connectivity.

1.1.4. Empowered Multimedia Capabilities

Built-in 3D/2D performance graphics engine with MPEG-2, WMV9, VC1 and H.264 video decoding accelerator.

1.1.5. Optimize integration with multiple I/O access

Front and back panel I/O access enables the AMOS-3005 system to easily access to peripherals, support various applications, easy integration, quick setup and easy maintenance.

1.1.6. SIM Card Slot

The AMOS-3005 has a built-in SIM card slot that can support active SIM card from mobile phone service providers for 3G communication.

1.1.7. Storage Expansion

The mSATA slot enables the AMOS-3005 to have flexible storage of mSATA flash drive.

1.1.8. Wide Range of Power Sources

The AMOS-3005 supports a wide range of input power from 9V~36V DC. The flexibility of power input enables the system to be deployable for various automation environments.

1.1.9. Wide Range of Operating Temperatures

The AMOS-3005 carries a qualified thermal performance design which allows a wide range of operating temperature from -20°C to 60°C, suitable for critical applications.

1.1.10. Shock Resistant

The AMOS-3005 is shock resistant for maximum reliability.

1.1.11. Multiple Mounting Solutions

The AMOS-3005 supports multiple methods for mounting the chassis securely. It can be mounted to a table, wall, and any flat surface or to VESA mountable surfaces with the optional VESA mounting kit.

1.1.12. Embedded OS ready

It is 100% compatible with several operating systems including Microsoft Windows 10, Windows 8.1, Windows 8, Windows 7, Windows Embedded Standard 7, and Linux.

1.2. Product Specifications

Processor
- 1.2GHz VIA Eden® X4

Chipset
- VIA VX11 Media System Processor

BIOS
- AMI BIOS, 32Mbit Flash memory

System Power Management
- Wake-on LAN, Keyboard power-on, Timer power-on, System power management, AC power failure recovery, Watchdog timer control

System Memory
- 1 x DDR3 1333 SDRAM SODIMM slot
- Supports up to 8GB memory size

Storage
- Supports one mSATA slot

Graphics
- Integrated VIA C-640 DX11 3D/2D graphics with MPEG-2, WMV9, VC1, and H.264 video decoding accelerator

Display I/O
- 1 x HDMI port
- 1 x VGA port supporting VGA resolutions up to 2048 x 1536 pixels
- Dual independent VGA +HDMI® display at different resolutions, pixel depths, and refresh rate

Audio
- VIA VT2021 High Definition Audio Codec
- Supports Line-out and Mic-in audio jacks

USB
- Integrated USB controller built-in VX11 chipset
- Supports two USB 3.0 ports
- Supports two USB 2.0 ports (lockable USB ports for secure connections)
- +5VSUS or +5V power selection by jumper VUSB_SEL1 for USB 2.0 ports and onboard USB pin header
- Reserved onboard USB pin header
- Onboard USB Wi-Fi connector (JWLAN1) reserved to support VIA EMIO-1533 USB Wi-Fi module

LAN
- 2 x Realtek RTL8111G PCIe Gigabit Ethernet controllers

COM
- Fintek Super I/O F71869ED controller
- Supports three COM ports
  - BIOS selectable to support adjust functionality of RS-232/422/485 mode of COM1 and COM2 ports
  - 5V/12V power selection by jumper JCOMV1 and JCOMV2 for COM1 and COM2 ports

Expansion I/O
- 1 x MiniPCIe slot for 3G/GPS/Wi-Fi module
- 1 x Onboard SIM card slot

Watchdog Timer
- System reset; programmable 1~255 sec.

Front Panel I/O
- 1 x Power on/off button
- 1 x Green LED indicator for power status
- 1 x Red LED indicator for HDD activity
- 2 x COM ports for RS-232/422/485
- 2 x Lockable USB 2.0 ports
- 3 x Reserved antenna holes for 3G, GPS and Wi-Fi

Back Panel I/O
- 1 x VGA port
- 1 x HDMI® port
- 1 x DIO port for 8-bit GPIO
- 2 x USB 3.0 ports
- 2 x Gigabit Ethernet ports
- 3 x Audio jacks: Line-out and Mic-in
- 1 x 2-pole Phoenix DC jack

Power Supply
- 9V ~ 36V DC (typical: 19W)

Mechanical Characteristics
- Construction
  - Aluminum top chassis housing
  - Dual removable front and rear metal face plates
  - Removable bottom metal plate cover
- Mounting
  - Wall mountable
  - DIN Rail/VESA mountable
- Dimensions (W x H x D)
  - 150.5mm x 48.1mm x 109.8mm
- Weight
  - 1.4kg (3.08lbs)

Environmental Specification
- Operating Temperature
  - -20°C ~ 60°C (with qualified industrial grade mSATA flash drive)
- Storage Temperature
  - -20°C ~ 70°C
- Operating Humidity
  - 0% ~ 95% (relative humidity; non-condensing)
- Vibration Loading During Operation
  - With mSATA flash drive: 5Grms, IEC 60068-2-64, random, 5 ~ 500Hz, 1hr/axis
- Shock During Operation
  - With mSATA flash drive: 50G, IEC 60068-2-27, half size, 11ms duration
- Compliance
  - CE, FCC

Operating System

- Microsoft Windows 10
- Microsoft Windows 8.1
- Microsoft Windows 8
- Microsoft Windows 7
- Microsoft Windows Embedded Standard 7
- Linux

Note:
As the operating temperature provided in the specifications is a result of the test performed in VIA's chamber, a number of variables can influence this result. Please note that the working temperature may vary depending on the actual situation and environment. It is highly suggested to execute a solid testing and take all the variables into consideration when building the system. Please ensure that the system runs well under the operating temperature in terms of application.

1.3. Layout Diagram

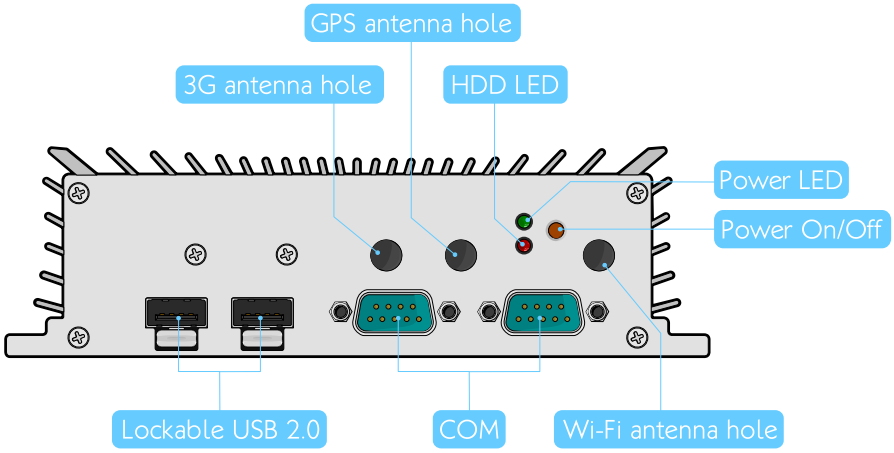

Figure 1: Front panel I/O layout

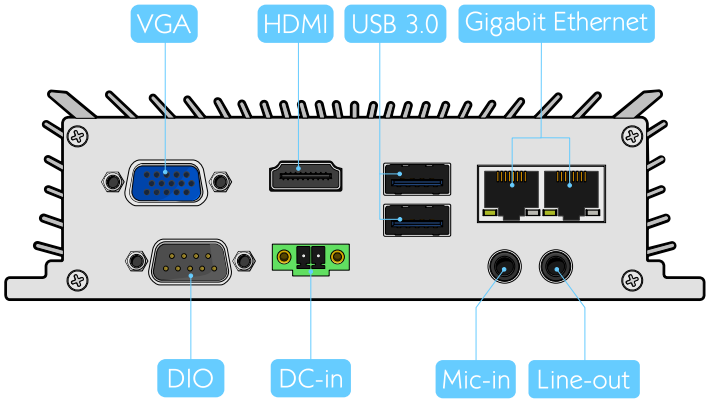

Figure 2: Back panel I/O layout

1.4. Product Dimensions

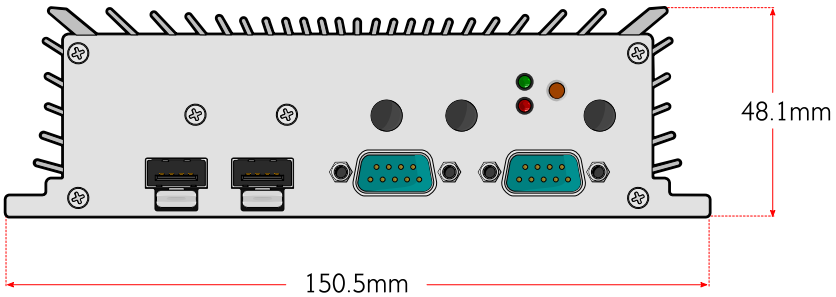

Figure 3: Dimensions of the AMOS-3005 (Front view)

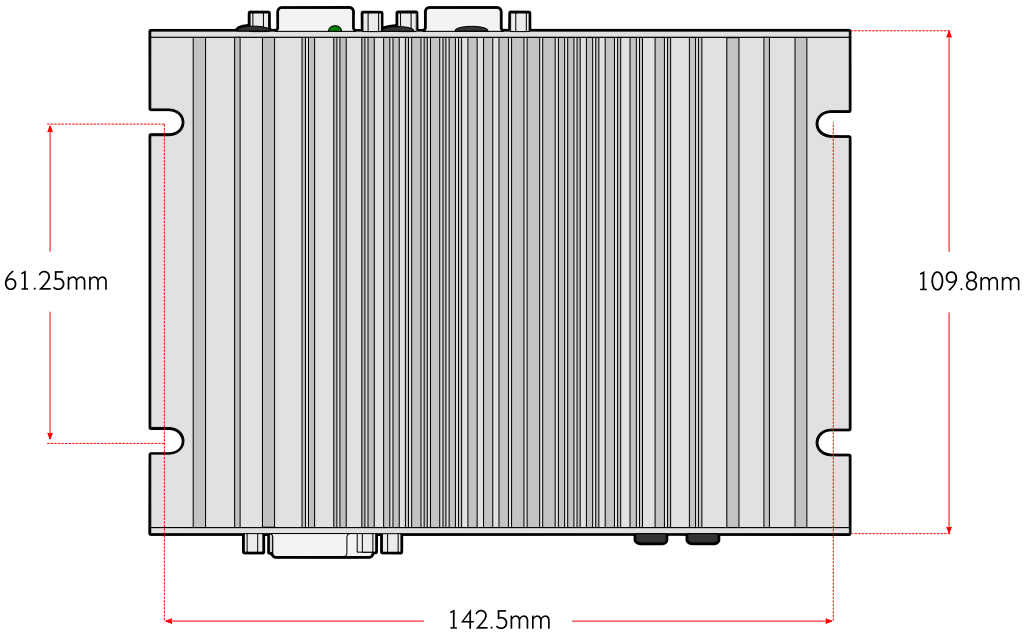

Figure 4: Dimensions of the AMOS-3005 (Top view)

2. External I/O Pin Descriptions and Functionality

This chapter provides information about the AMOS-3005's external I/O ports, LED indicators and their functionality.

2.1. Power On/Off Button

The AMOS-3005 comes with a power button that supports Soft power On/Off (Instant Off or 4 second delay), and Suspend.

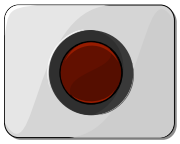

Figure 5: Power on/off button diagram

2.2. LED Indicators

There are two LEDs on the front panel of the AMOS-3005 that indicates the status of the system:

- Power LED is green and indicates the status of the system's power.
- HDD LED is red and indicates the storage activity.

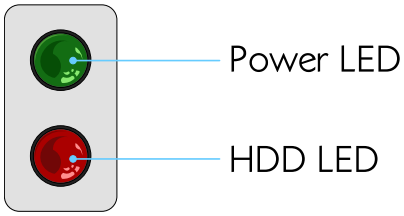

Figure 6: LEDs indicator diagram

2.3. COM Port

The AMOS-3005 has two COM ports (male DE-9 connector) located on the front panel. The COM ports can be configured as RS-232, RS-422, or RS-485. The default setting of COM ports is RS-232. To configure the COM ports, user needs to setup it into the BIOS.

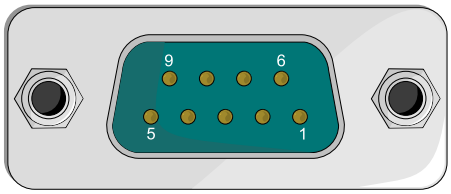

Figure 7: COM port diagram

	RS-232	RS-422	RS-485
Pin	Signal	Signal	Signal
1	DCD	Tx-	Tx-
2	RxD	Tx+	Tx+
3	TxD	Rx+	NC
4	DTR	Rx-	NC
5	GND	GND	GND
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC

Table 1: COM port pinout

2.4. Lockable USB 2.0 Port

The AMOS-3005 has two lockable USB 2.0 ports (USB0 and USB1) on the front panel. Each port gives complete Plug and Play and hot swap capability for external devices. The USB interface complies with USB UHCI, Rev. 2.0. Lockable USB 2.0 port is specially designed to secure USB connection. The USB 2.0 pinout is shown below.

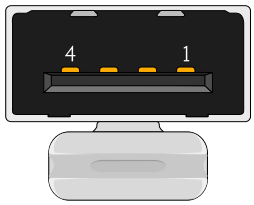

Figure 8: Lockable USB 2.0 port diagram

	USB0		USB1
Pin	Signal	Pin	Signal
1	VCC	1	VCC
2	USB1 data -	2	USB2 data -
3	USB1 data +	3	USB2 data +
4	GND	4	GND

Table 2: Lockable USB 2.0 ports pinout

Reminder:
To unlock the USB device from the lockable USB port, push the tab on the lockable port then pull the USB device. If necessary, use a tip of the screw driver tool or any thin rod to push the tab.

2.5. Gigabit Ethernet Port

The AMOS-3005 is equipped with two Gigabit Ethernet ports. Both Gigabit Ethernet ports are using 8 Position 8 Contact (8P8C) receptacle connector or commonly referred to as RJ-45. It is fully compliant with IEEE 802.3 (10BASE-T), 802.3u (100BASE-TX), and 802.3ab (1000BASE-T) standards.

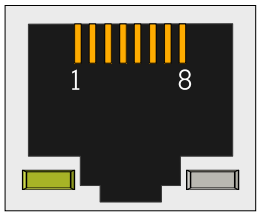

Figure 9: Gigabit Ethernet port diagram

Gigabit Ethernet Port 1	
Pin	Signal
1	LAN1_TD0+
2	LAN1_TD0-
3	LAN1_TD1+
4	LAN1_TD1-
5	LAN1_TD2+
6	LAN1_TD2-
7	LAN1_TD3+
8	LAN1_TD3-

Gigabit Ethernet Port 2	
Pin	Signal
1	LAN2_TD0+
2	LAN2_TD0-
3	LAN2_TD1+
4	LAN2_TD1-
5	LAN2_TD2+
6	LAN2_TD3-
7	LAN2_TD3+
8	LAN2_TD3-

Table 3: Gigabit Ethernet port pinout

Both Gigabit Ethernet ports (RJ-45) are equipped with two LED indicators on the front side to show its Active/Link status and Speed status.

	Active LED (Left LED on RJ-45 port)	Link LED (Right LED on RJ-45 port)
Link Off	LED is off	LED is off
Speed_10Mbit	Flash in Orange color	LED is off
Speed_100Mbit	Flash in Orange color	The LED is always On in Red color
Speed_1000Mbit	Flash in Orange color	The LED is always On in Green color

Table 4: Gigabit Ethernet port LED color definition

2.6. VGA Port

The AMOS-3005 provides a high resolution VGA interface through DE-15 female connector on the back panel. It supports resolutions up to 2048 x 1536 pixels. The pinout of the VGA port is shown below.

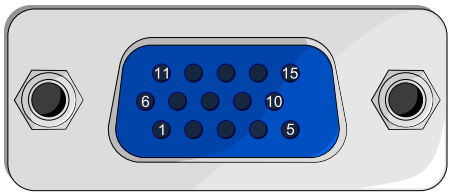

Figure 10: VGA port diagram

Pin	Signal	Pin	Signal	Pin	Signal
1	Red	6	GND	11	NC
2	Green	7	GND	12	DDC_SPD
3	Blue	8	GND	13	HSync
4	NC	9	+5V	14	VSync
5	GND	10	GND	15	DDC_SCL

Table 5: VGA port pinout

2.7. USB 3.0 Port

The AMOS-3005 is equipped with two USB 3.0 ports. The USB 3.0 port has a maximum data transfer rate up to 5Gbps and offers a backward compatibility with previous USB 2.0 specifications. It gives complete Plug and Play and hot swap capability for external devices. The pinout of the typical USB 3.0 port is shown below.

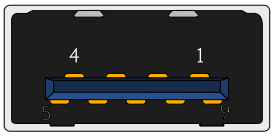

Figure 11: USB 3.0 port diagram

USB 3.0 port 1		USB 3.0 port 2	
Pin	Signal	Pin	Signal
1	+5V	1	+5V
2	Data1-	2	Data2-
3	Data1+	3	Data2+
4	GND	4	GND
5	RX1-	5	RX2-
6	RX1+	6	RX2+
7	GND	7	GND
8	TX1-	8	TX2-
9	TX1+	9	TX2+

Table 6: USB 3.0 ports pinout

2.8. HDMI® Port

The AMOS-3005 has one HDMI port (19-pin HDMI Type C connector) as defined in the HDMI specification. The HDMI port is for connecting to HDMI displays. The pinout of the HDMI port is shown below.

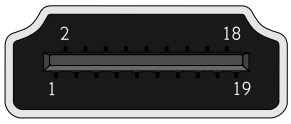

Figure 12: HDMI® port diagram

Pin	Signal	Pin	Signal
1	TX2+	2	GND
3	TX2-	4	TX1+
5	GND	6	TX1-
7	TX0+	8	GND
9	TX0-	10	TXC+
11	GND	12	TXC-
13	NC	14	NC
15	DDCSCL	16	DDCSDA
17	GND	18	+5V
19	Hot Plug Detect		

Table 7: HDMI® port pinout

2.9. Audio Jacks

The AMOS-3005 offers High Definition Audio through 3.5 mm TRS jack connectors on the back panel: Mic-in and Line-out.

The Mic-in jack is for connecting to a microphone. The Line-out jack is for connecting to external speakers or headphones.

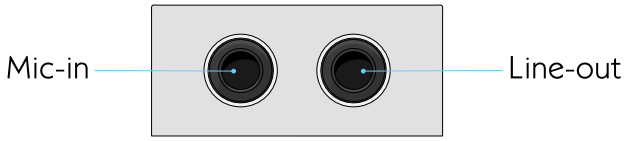

Figure 13: Audio jack receptacle diagram

Jack	Description
Mic-in	TRS jack, 3.5mm Ø 5P, 90 Degree, Female, shielded
Line-out	TRS jack, 3.5mm Ø 5P, 90 Degree, Female, shielded

Table 8: Audio jack receptacle description

2.10. DC-In Jack

The AMOS-3005 comes with a 2-pole Phoenix DC jack on the back panel that carries 9V~36V DC external power input.

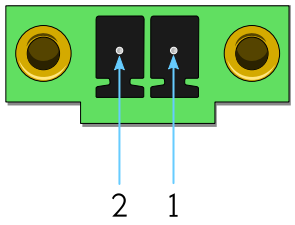

Figure 14: DC-in jack diagram

Pin	Signal
1	GND
2	9V~36V DC

Table 9: DC-in jack pinout

2.11. DIO Port

The AMOS-3005 is equipped with one 8-bit Digital I/O (GPIO) port (male DE-9 connector), which offers Digital I/O communication interface. The Digital I/O default setting supports up to four GPO and four GPI signals. The pinout of the Digital I/O port is shown below.

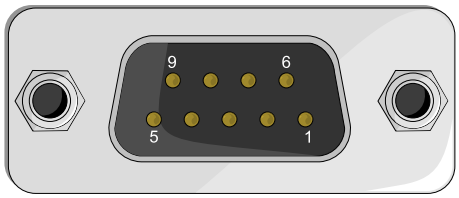

Figure 15: DIO port diagram

Pin	Signal
1	GPO_34
2	GPO_36
3	GPI_50
4	GPI_52
5	GND
6	GPO_35
7	GPO_37
8	GP1_51
9	GPI_53

Table 10: DIO port pinout

3. Onboard I/O

This chapter provides information about the onboard pin headers and connectors.

3.1. USB 2.0 Pin Header

The onboard USB 2.0 pin header (JUSB2_1) enables additional two USB 2.0 ports. The pinout of the onboard USB 2.0 pin header is shown below.

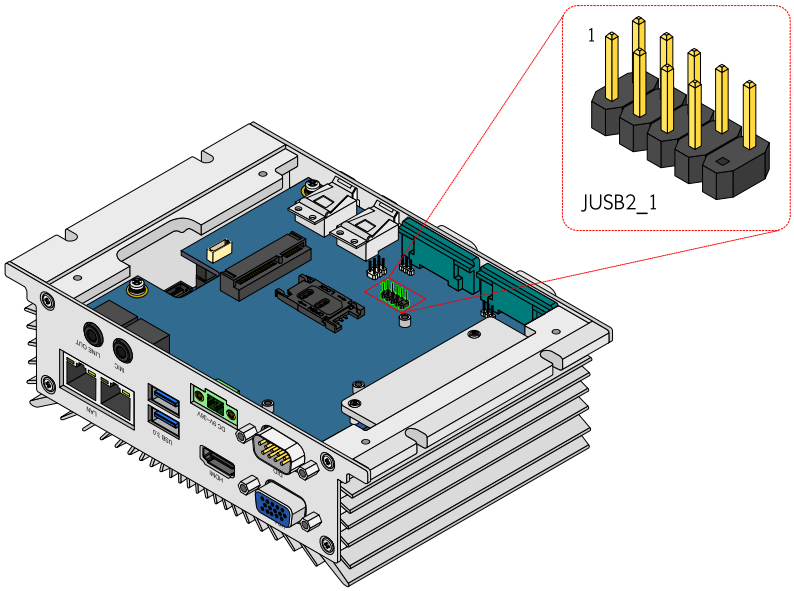

Figure 16: USB 2.0 pin header diagram

Pin	Signal	Pin	Signal
1	VUSB2	2	VUSB2
3	USBD_T3-	4	USBD_T2-
5	USBD_T3+	6	USBD_T2+
7	GND	8	GND
9	NC	10	GND

Table 11: USB 2.0 pin header pinout

3.2. USB Wi-Fi Connector

The AMOS-3005 is equipped with onboard USB Wi-Fi connector labeled "JWLAN1" for USB Wi-Fi module (EMIO-1533). The pinout of the USB Wi-Fi connector is shown below.

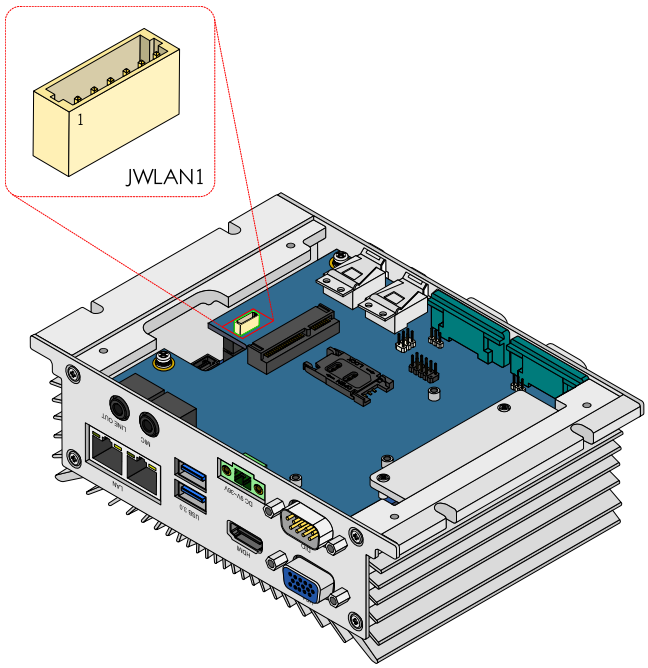

Figure 17: USB Wi-Fi connector diagram

Pin	Signal
1	VUSB4
2	USBD_T4-
3	USBD_T4+
4	GND
5	NC
6	EN_USBWIFI

Table 12: USB Wi-Fi connector pinout

4. Expansion Slots

4.1. MiniPCIe Slot

The AMOS-3005 is equipped with miniPCIe slot for wireless networking option such as 3G, GPS and Wi-Fi modules. The MiniPCIe slot is compatible with miniPCIe 2.0 modules that has full-length or half-length in size.

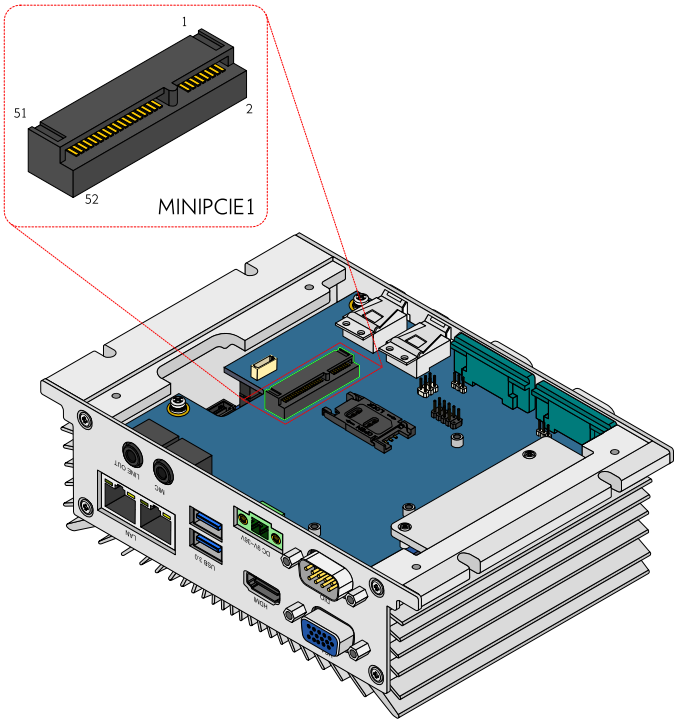

Figure 18: MiniPCIe slot diagram

4.2. SIM Card Slot

The AMOS-3005 is equipped with SIM card slot that can support active SIM card for 3G network connectivity.

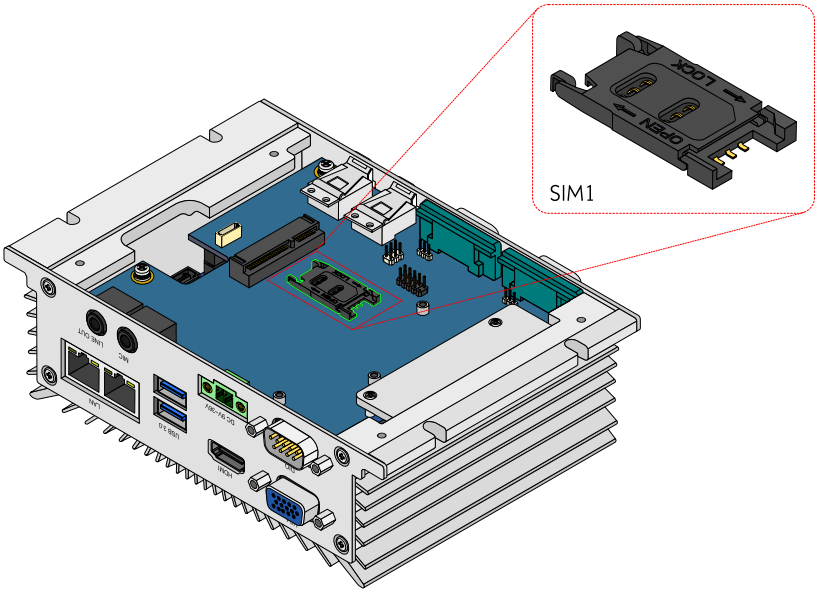

Figure 19: SIM card slot diagram

4.3. mSATA Slot

The AMOS-3005 comes with mSATA slot to support mSATA flash drive module to have flexible storage. The mSATA slot is labeled as "MSATA". The location of the mSATA slot is shown below.

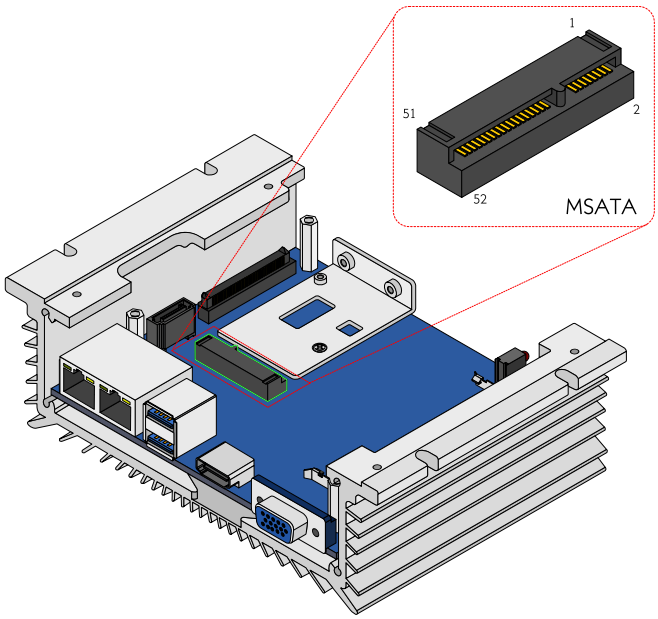

Figure 20: mSATA slot diagram

4.4. DDR3 SODIMM Slot

The AMOS-3005 comes with one 204-pin DDR3 SDRAM SODIMM slot that support non-ECC DDR3 1333 SODIMM memory module. The memory slot can accommodate up to 8GB of DDR3 1333 SODIMM memory. The memory slot is labeled as "SODIMM". The location of the DDR3 memory slot is shown below.

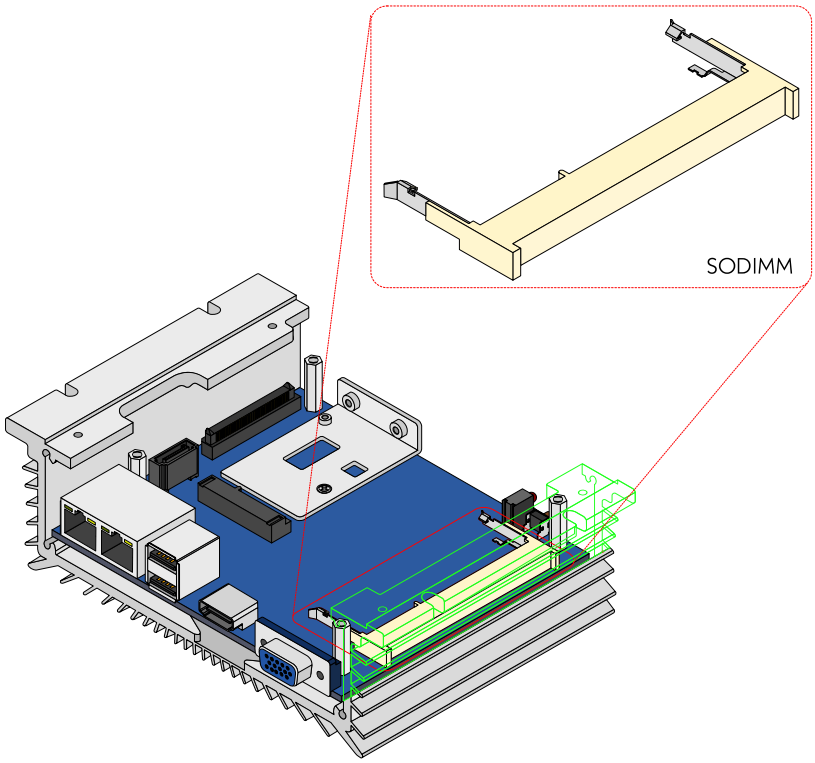

Figure 21: DDR3 SODIMM slot diagram

5. Jumper Settings

This section will explain how to configure the AMOS-3005 to match the needs of your application by setting the jumpers.

Jumper Description

A jumper consists of pair conductive pins used to close in or bypass an electronic circuit to set up or configure particular feature using a jumper cap. The jumper cap is a small metal clip covered by plastic. It performs like a connecting bridge to short (connect) the pair of pins. The usual colors of the jumper cap are black/red/blue/white/yellow.

Basic Jumper Configuration

There are two settings of the jumper pin: "**Short** and **Open**". The pins are "**Short**" when a jumper cap is placed on the pair of pins. The pins are "**Open**" if the jumper cap is removed.

In addition, there are jumpers that have three or more pins, and some pins are arranged in series. In case of a jumper with three pins, place the jumper cap on pin 1 and pin 2 or pin 2 and 3 to **Short** it.

Some jumper size is small or mounted on the crowded location on the board that makes it difficult to access. Therefore, using a long-nose pliers in installing and removing the jumper cap is very helpful.

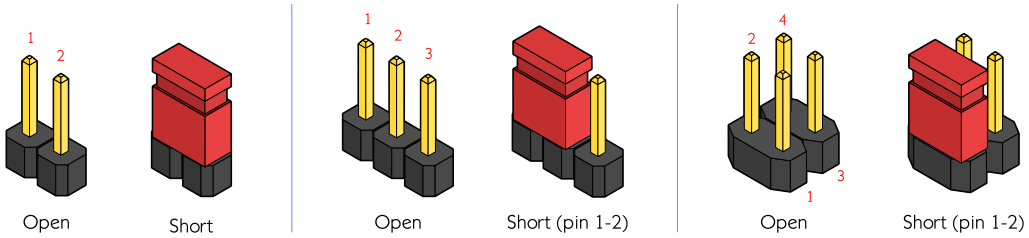

Figure 22: Jumper settings example

Caution:
Make sure to install the jumper cap on the correct pins. Installing it in the wrong pin might cause damage and malfunction.

5.1. COM Voltage Select Jumpers

The COM ports on the front panel can be configured to carry +5V or +12V power, or the Ring Indicator (RI) signal by setting the COM voltage select jumpers (JCOMV1 ~JCOMV2).

5.1.1. JCOMV1 Voltage Select Jumper

The voltage select jumpers "JCOMV1" is set to determine the input carry voltage or Ring Indicator (RI) signal of COM1 port on the front panel. The control signal Ring Indicator (RI) is the default setting. The jumper settings are shown below.

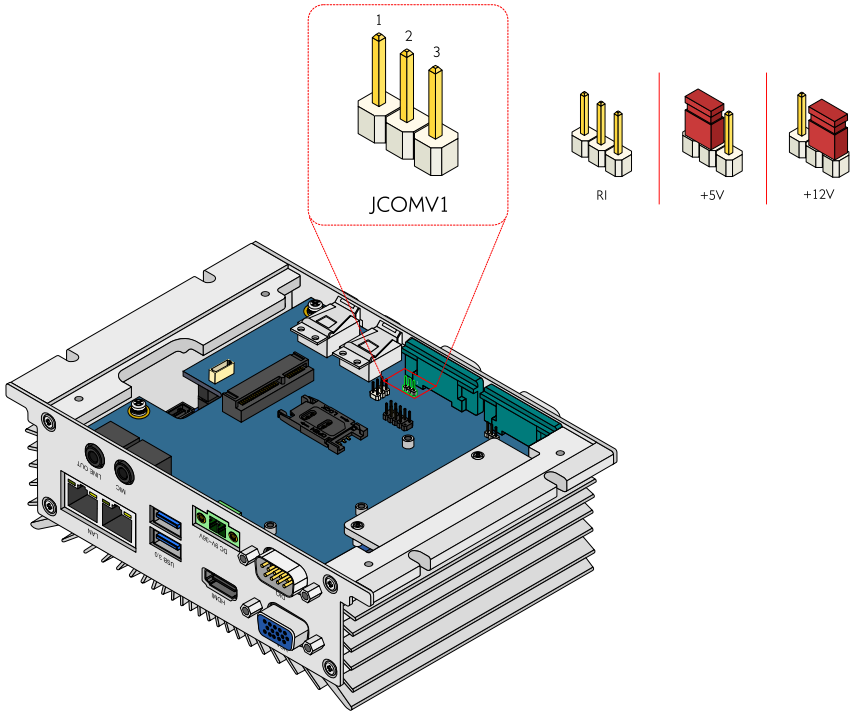

Figure 23: JCOMV1 voltage select jumper diagram

Setting	Pin 1	Pin 2	Pin 3
RI (default)	Open	Open	Open
+5V	Short	Short	Open
+12V	Open	Short	Short

Table 13: JCOMV1 voltage select jumper settings

5.1.2. JCOMV2 Voltage Select Jumper

The voltage select jumpers "JCOMV2" is set to determine the input carry voltage or Ring Indicator (RI) signal of COM2 port on the front panel. The control signal Ring Indicator (RI) is the default setting. The jumper settings are shown below.

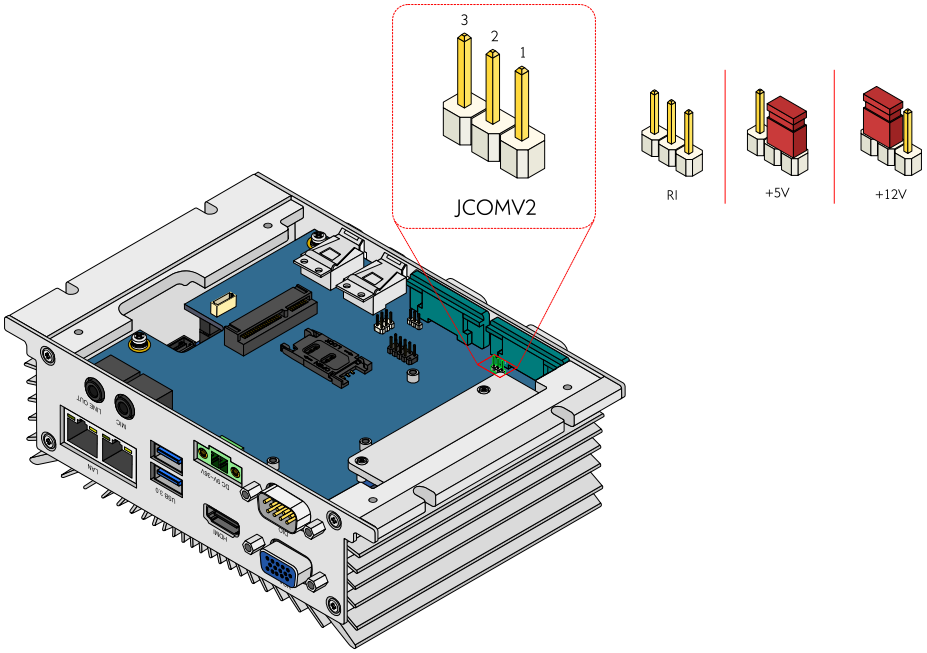

Figure 24: JCOMV2 voltage select jumper diagram

Setting	Pin 1	Pin 2	Pin 3
RI (default)	Open	Open	Open
+5V	Short	Short	Open
+12V	Open	Short	Short

Table 14: JCOMV2 voltage select jumper settings

5.2. USB 2.0 Power Type Select Jumper

The jumper "JUSB_SEL1" controls the power type delivered to the USB 2.0 ports (USB0 and USB1) on the front panel and to onboard USB pin header (JUSB2_1). The power can be set either standby power (+5VSUS) or +5V. +5V is the default setting. The jumper settings are shown below

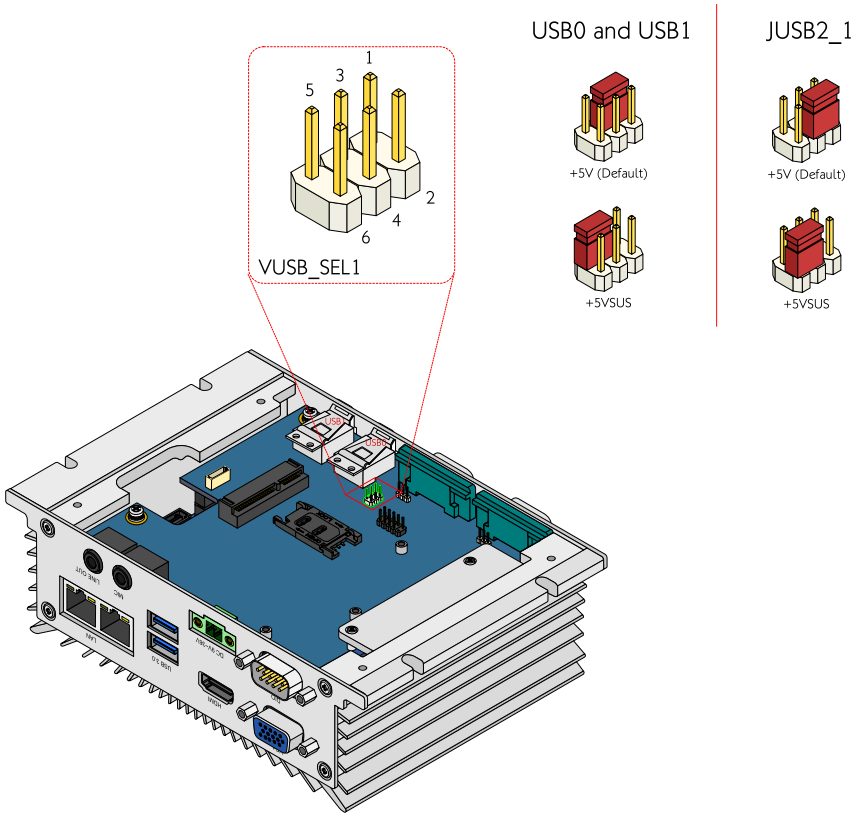

Figure 25: USB 2.0 power type select jumper diagram

USB0 and USB1

Setting	Pin 1	Pin 3	Pin 5
+5V (default)	Short	Short	Open
+5VSUS	Open	Short	Short

JUSB2_1

Setting	Pin 2	Pin 4	Pin 6
+5V (default)	Short	Short	Open
+5VSUS	Open	Short	Short

Table 15: USB 2.0 power type select jumper settings

6. Hardware Installation

This chapter provides you with information about hardware installation procedures. It is recommended to use a grounded wrist strap before handling computer components. Electrostatic discharge (ESD) can damage come components.

6.1. Installing the DDR3 SODIMM memory

Step 1

Remove all chassis screws from the front and back panel plates. Then remove the hex standoff screws of VGA, DIO and COM ports as shown in the figure.

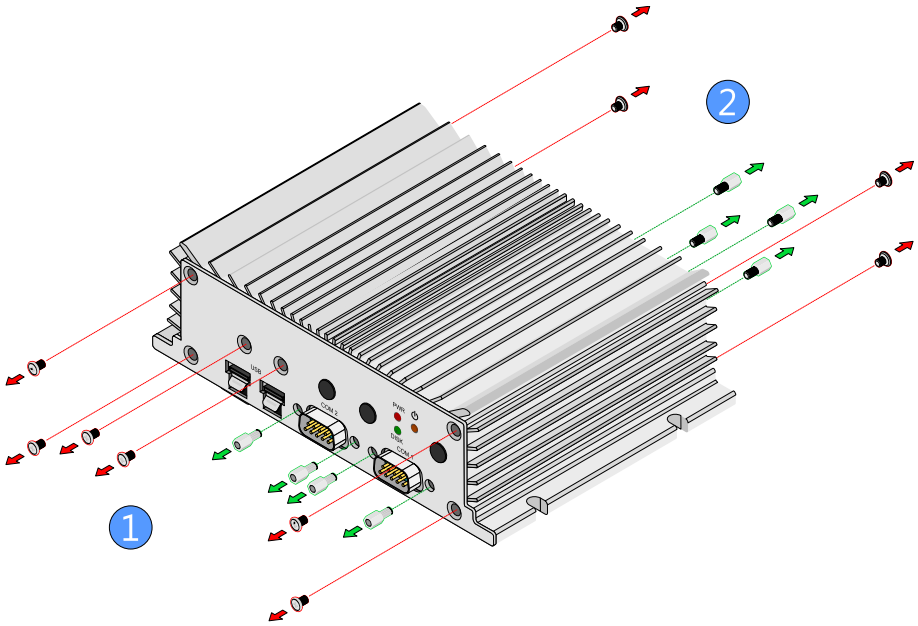

Figure 26: Unscrewing the front and back panel plates

Step 2

Gently detach the front and back panel plates from the chassis.

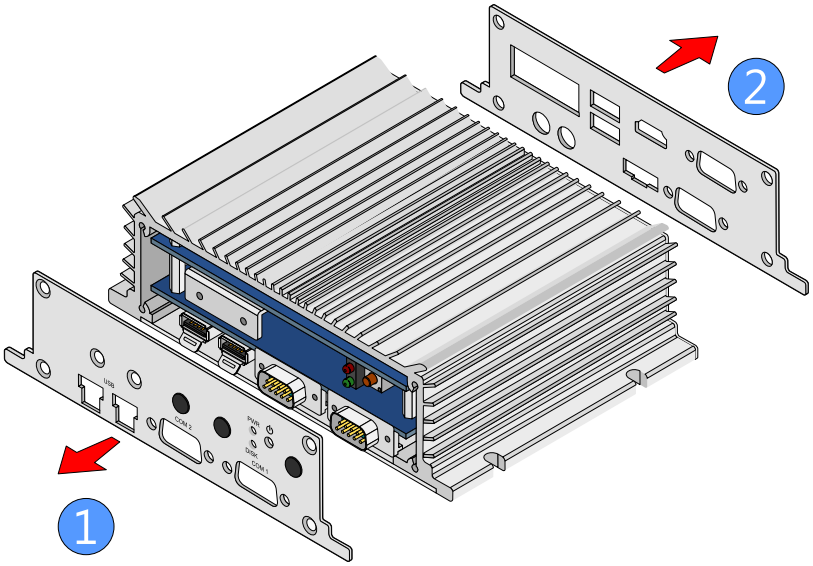

Figure 27: Removing the front and back panel plates

Step 3

Remove the four corner screws of the bottom cover plate. Gently lift up the bottom plate.

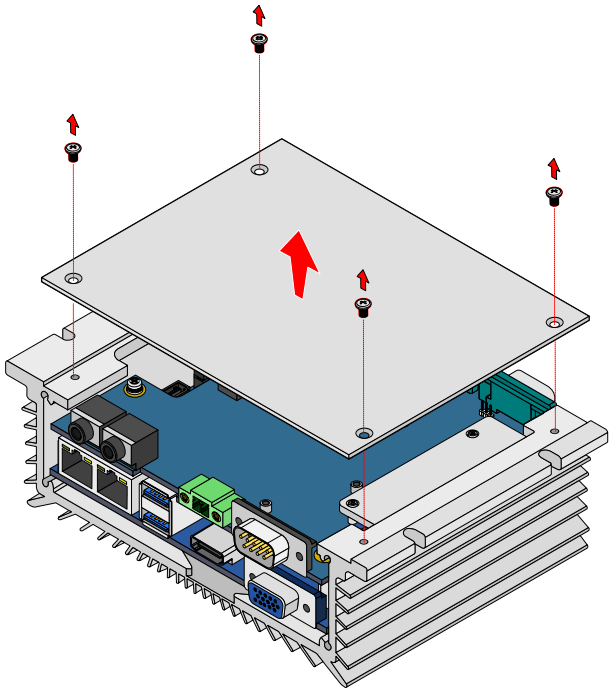

Figure 28: Removing the bottom cover plate

Step 4

Unscrew the four screws on the EMIO-2004 daughterboard.

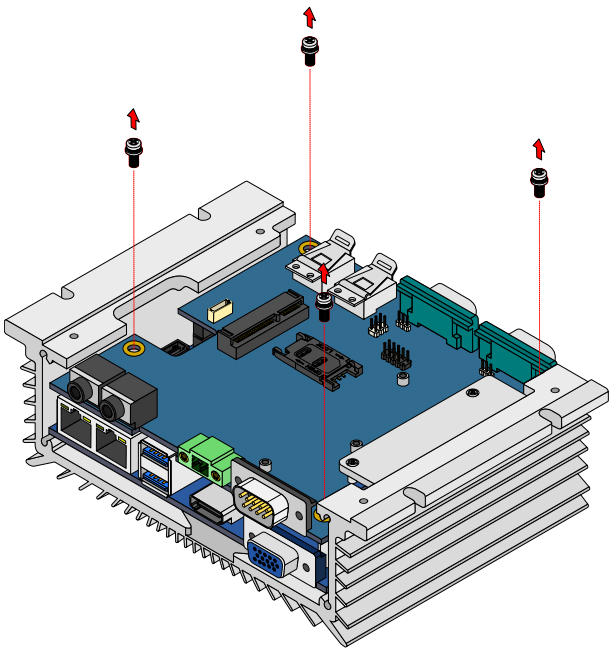

Figure 29: Unscrewing EMIO-2004 daughterboard

Step 5

Pull up the EMIO-2004 daughterboard to detach it from the mainboard. Slightly incline the daughterboard to the left then gently pull out the daughterboard rightward.

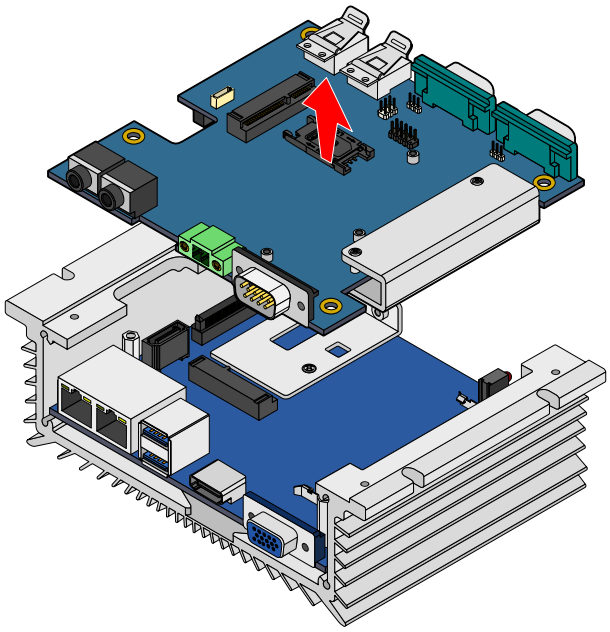

Figure 30: Removing EMIO-2004 daughterboard

Step 6

Flip over the EMIO-2004 daughterboard. Peel off the protective (plastic) cover of the pre-installed memory thermal pad on the memory heatsink.

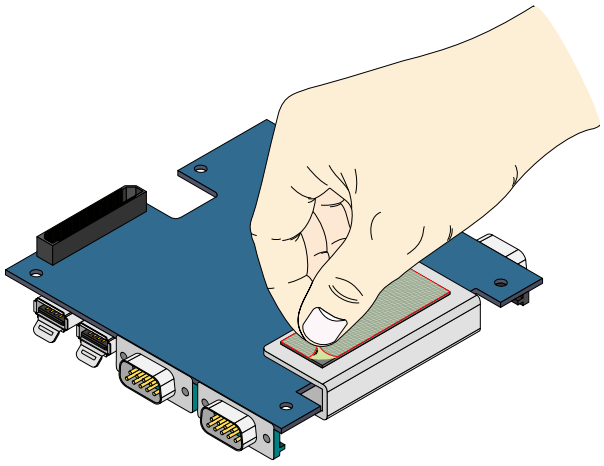

Figure 31: Peeling off the memory thermal pad protective cover

Step 7

Align the notch on the SODIMM memory module with the protruding wedge on the SODIMM slot. Gently insert the SODIMM memory module at a 30° angle.

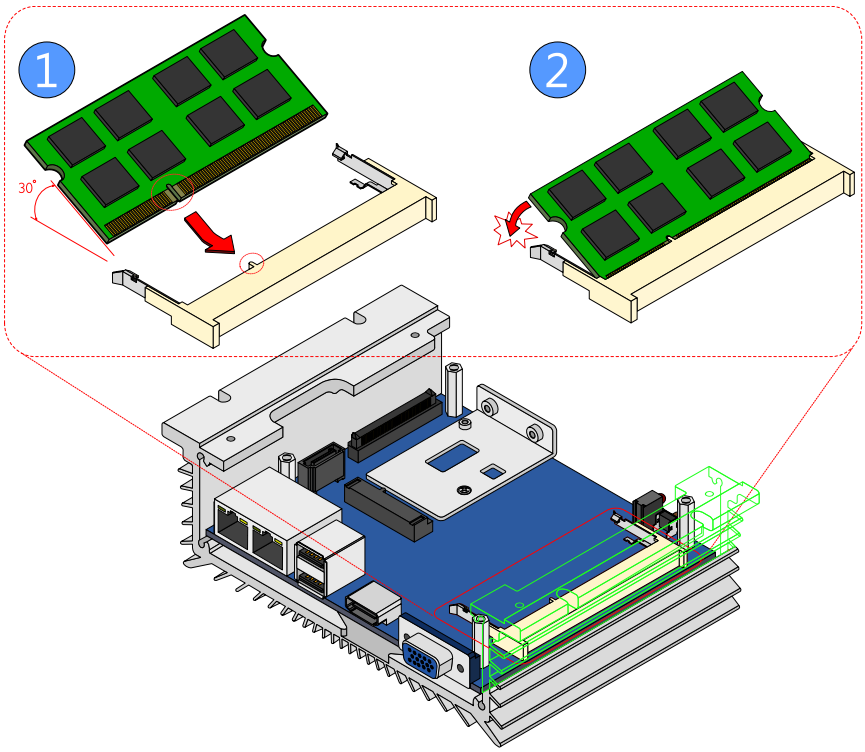

Figure 32: Installing SODIMM memory module

Step 8

Push down the SODIMM memory until the locking clips lock the memory module into place. There will be a slight tension as the SODIMM memory module is being locked

Step 9

Reinstall the EMIO-2004 daughterboard.

6.2. Removing the DDR3 SODIMM memory

Step 1

To disengage the locking clips, push the locking clips horizontally outward away from the SODIMM memory module.

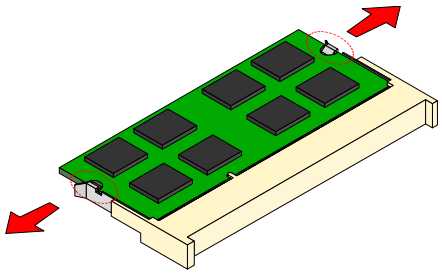

Figure 33: Disengaging the SODIMM locking clips

Step 2

When the locking clips have cleared, the SODIMM memory module will automatically pop up to the 30 degree angle. Remove the memory module.

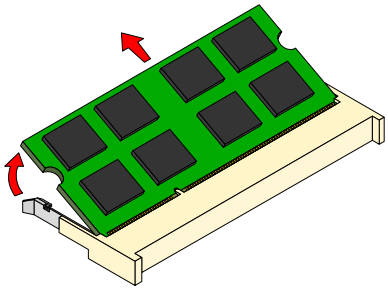

Figure 34: Removing the memory module

6.3. Installing the mSATA flash drive module

Note:
It is highly suggested to use Transcend's mSATA flash drive module.

Step 1
Prepare the mSATA thermal pad provided in the package.

Step 2
Peel off the bottom protective (plastic) cover of mSATA thermal pad. Paste the thermal pad onto the controller chip on mSATA module.

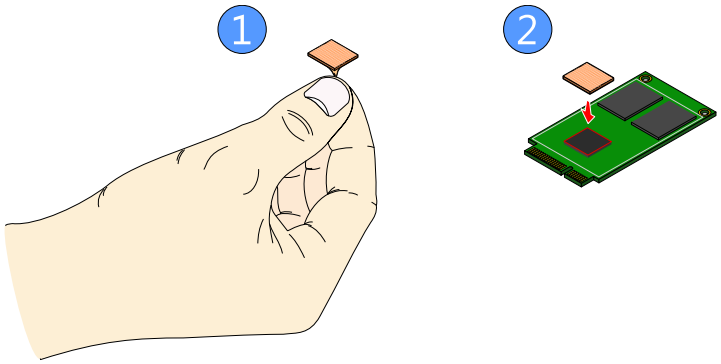

Figure 35: Applying the mSATA thermal pad

Step 3
Peel off the remaining protective (plastic) cover of mSATA thermal pad.

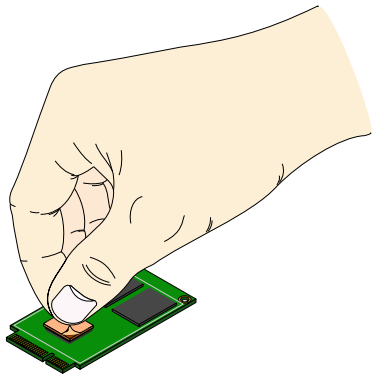

Figure 36: Peeling off the protective plastic cover of mSATA thermal pad

Step 4

Flip over the mSATA module. Align the notch on the mSATA module with the notch on the mSATA slot then insert the module at a 30° angle.

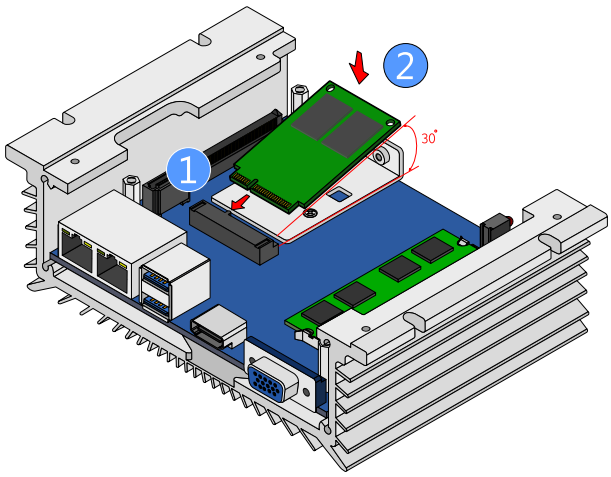

Figure 37: Inserting the mSATA module

Step 5

Once the module has been fully inserted, push down the mSATA module until the screw holes aligns with the standoff holes and the thermal pad is properly attached to the heatsink. Then secure the mSATA module with screw.

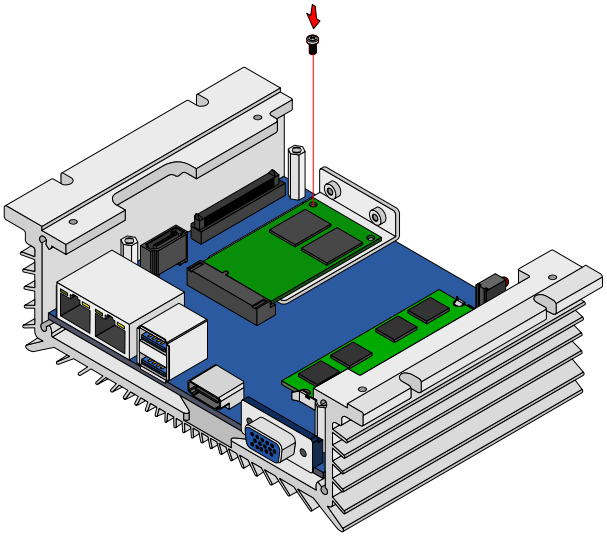

Figure 38: Securing the mSATA module

Step 6

Reinstall the EMIO-2004 daughterboard and the bottom plate.

Step 7

Apply a small amount of thermal grease on the outer side of mSATA heatsink before reinstalling the front panel plate. Use the thermal grease (in tube syringe) provided in the package.

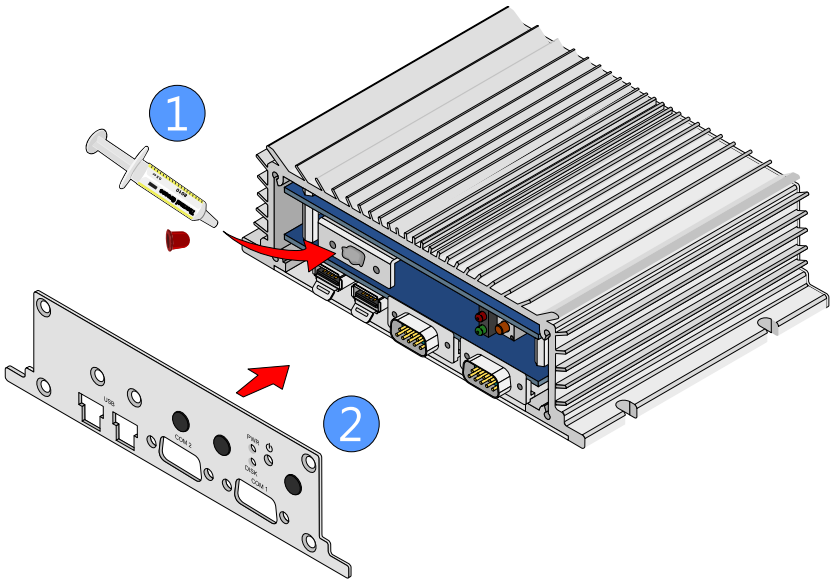

Figure 39: Applying thermal grease on mSATA heatsink

Reminder:
Whenever the user takes off the front panel plate, the amount of thermal grease (between the mSATA heatsink and front panel plate) may decrease. Therefore, adding a small amount of thermal grease is advisable.

6.4. Reinstalling the EMIO-2004 daughterboard

Step 1

Slightly incline the EMIO-2004 daughterboard to the left. Gently slide in the daughterboard until the EMIO female connector on daughterboard is aligned with the EMIO male connector on the EITX-2004 mainboard. Then push down the daughterboard until the EMIO connector is fully connected.

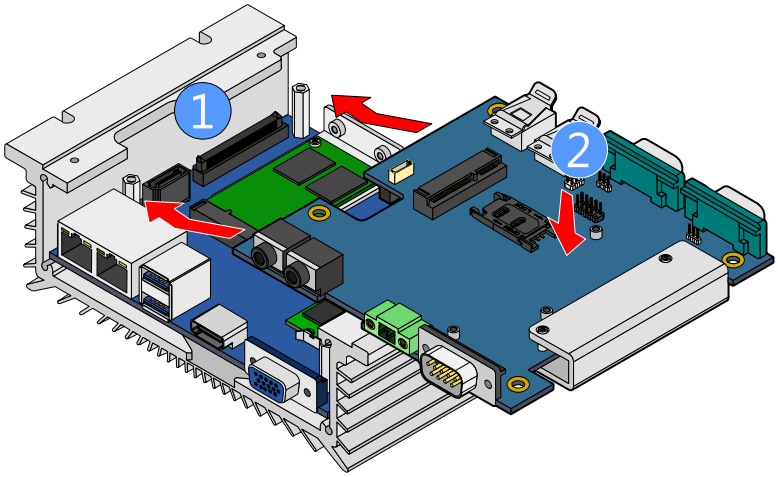

Figure 40: Reinstalling EMIO-2004 daughterboard

Step 2

Secure the EMIO-2004 daughterboard with four screws.

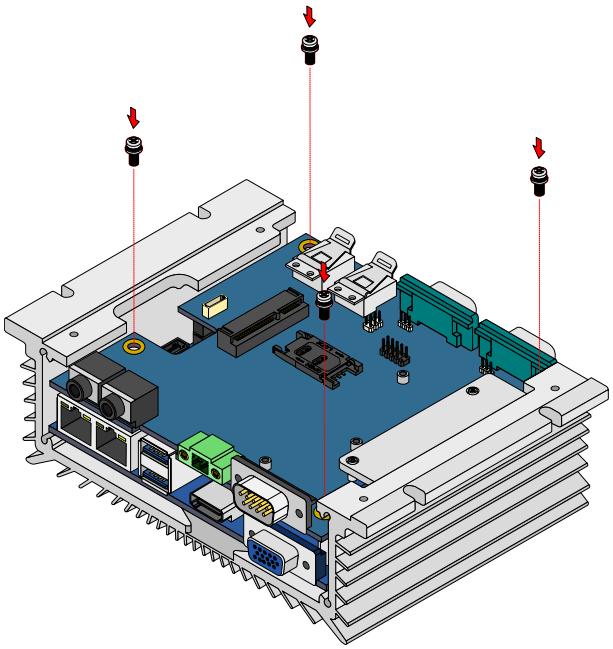

Figure 41: Securing EMIO-2004 daughterboard

6.5. Inserting the SIM card

Step 1

Push back firmly the SIM card slot to unlock the opening.

Step 2

Pull up the slot and place the SIM card inside the slot. Ensure the angled corner of the SIM card is placed in the correct way before closing the slot.

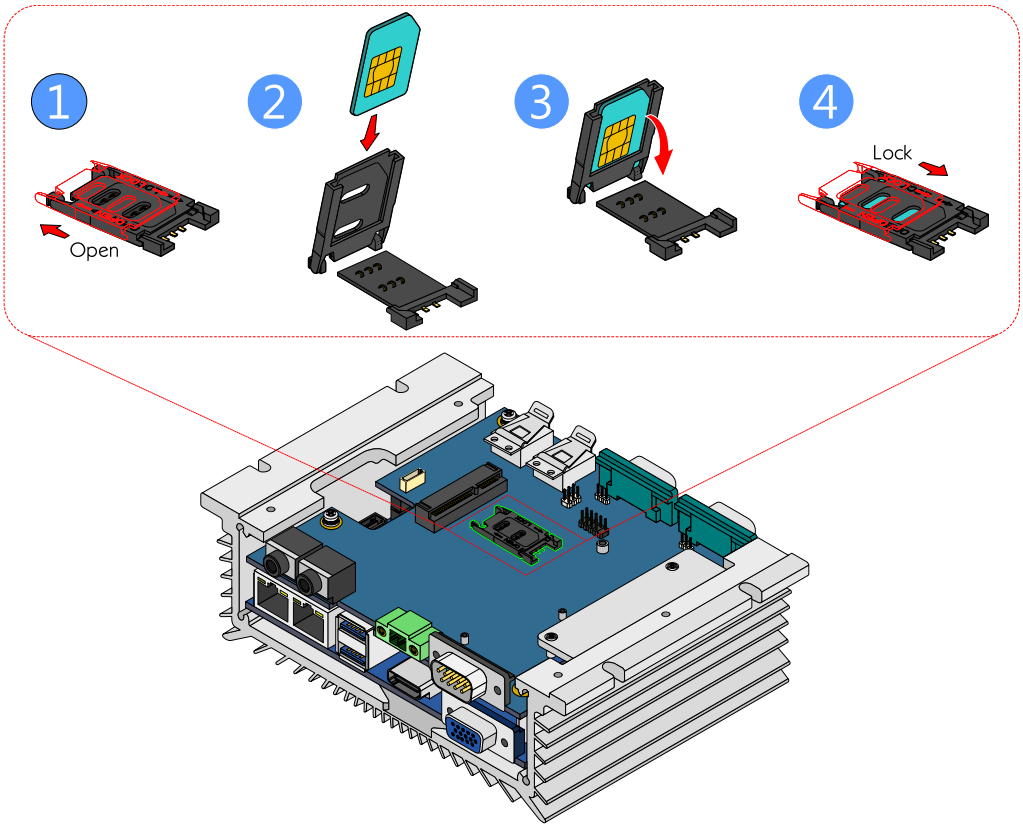

Figure 42: Inserting the SIM card

Step 3

Gently close the slot by pulling down the SIM slot.

Step 4

Carefully lock the SIM slot by sliding back the slot.

6.6. Installing the miniPCIe 3G/GPS/Wi-Fi module

Step 1

Align the notch on the miniPCIe 3G/GPS/Wi-Fi module with the notch on the miniPCIe slot. Then insert the module at a 30° angle.

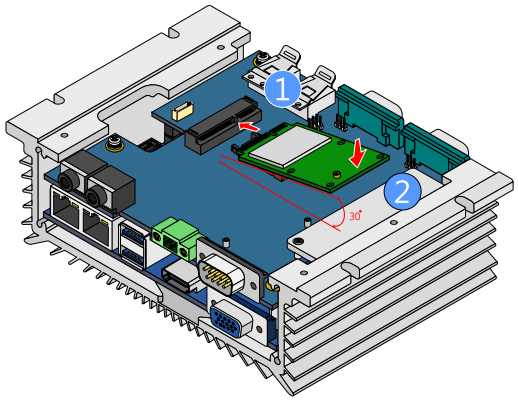

Figure 43: Installing the miniPCIe 3G/GPS/Wi-Fi module

Step 2

Once the module has been fully inserted, push down the module until the screw holes aligns with the standoff holes. Then secure the module with screw.

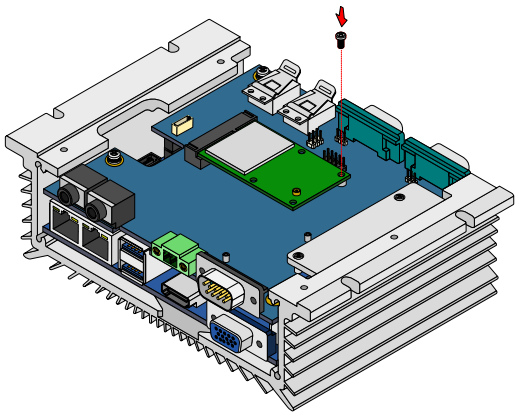

Figure 44: Securing the miniPCIe 3G/GPS/Wi-Fi module

Step 3

Remove the antenna hole cover from the front panel plate. To facilitate removing the cover, use a pair of needle-nose pliers to depress both locking clips simultaneously.

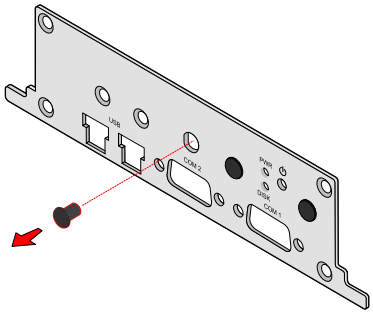

Figure 45: Removing the 3G antenna hole cover

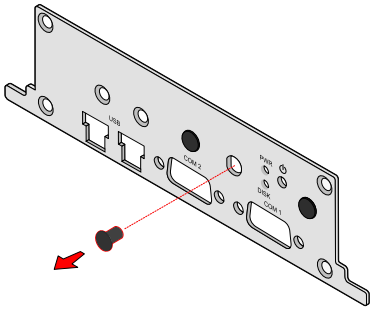

Figure 46: Removing the GPS antenna hole cover

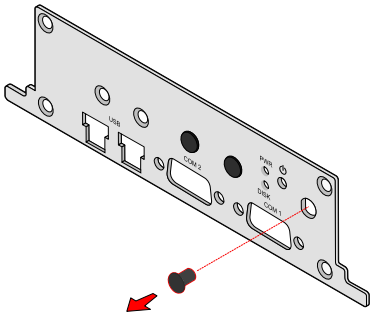

Figure 47: Removing the Wi-Fi antenna hole cover

Step 4

Insert the 3G/GPS/Wi-Fi antenna cable into the antenna hole from the inside of the front panel plate. Insert the washer, fasten it with the nut and install the external antenna. Insert the other end of the antenna cable into the available or suitable space going down to the bottom side of the system. Stretch the cable out to reach the installed miniPCIe 3G/GPS/Wi-Fi module. Then reinstall the front panel plate.

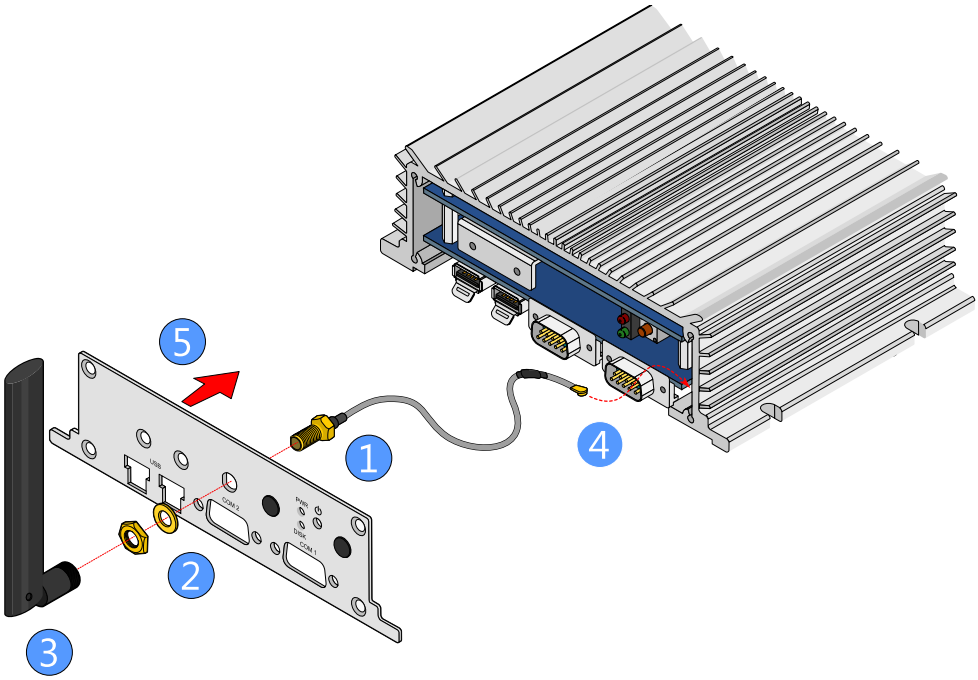

Figure 48: Installing the 3G antenna

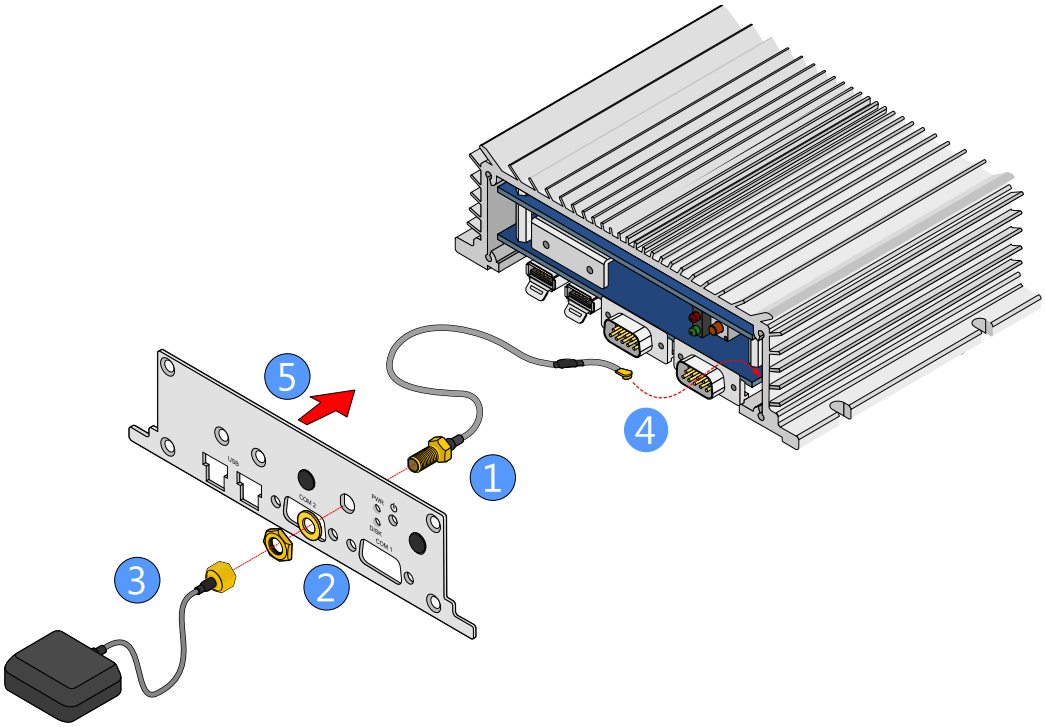

Figure 49: Installing the GPS antenna

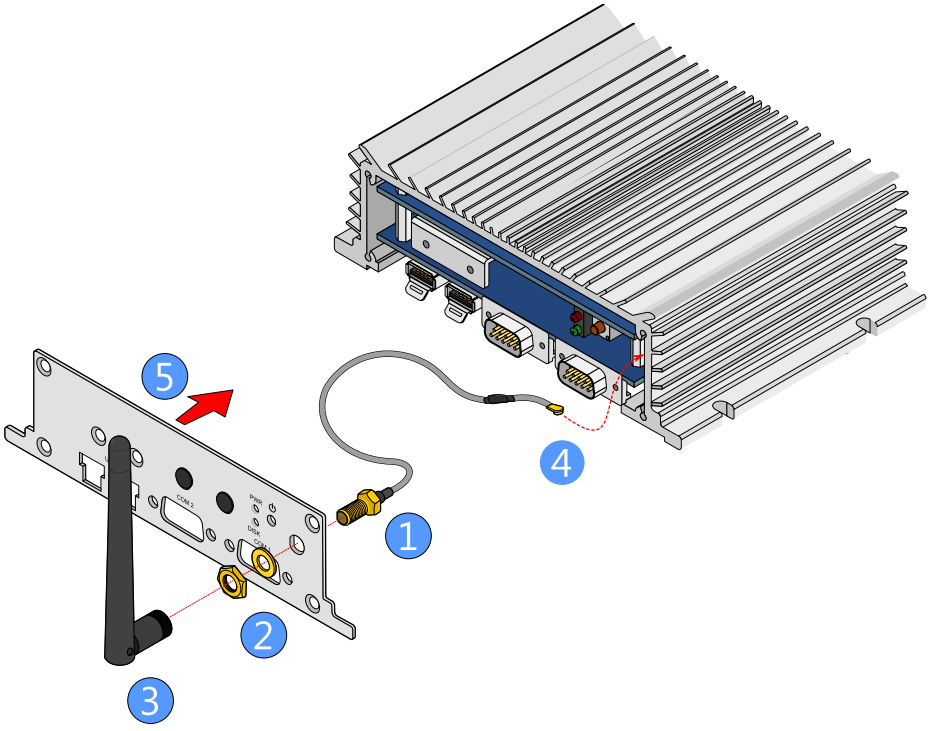

Figure 50: Installing the Wi-Fi antenna

Step 5

Gently connect the other end of the 3G/GPS/Wi-Fi antenna cable to the micro-RF connector on the miniPCIe 3G/GPS/Wi-Fi module.

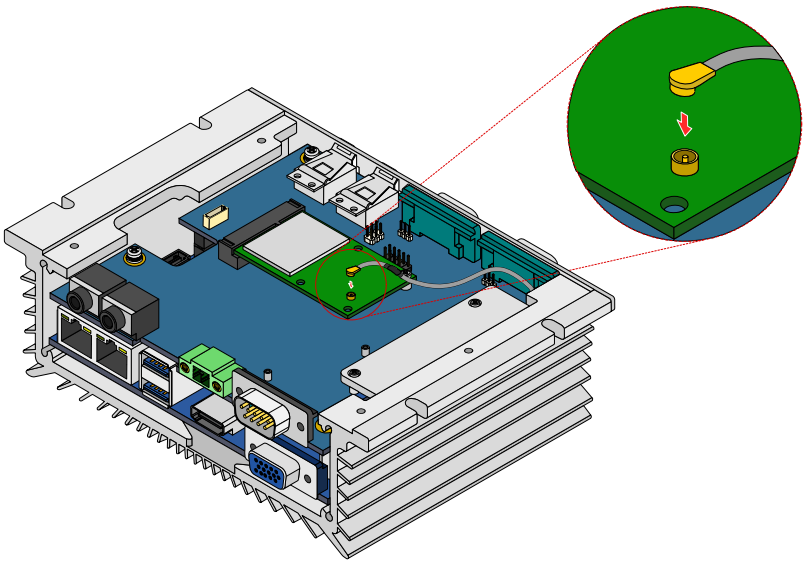

Figure 51: Connecting 3G/GPS/Wi-Fi antenna cable to the miniPCIe module

6.7. Installing the USB Wi-Fi module

Step 1

Mount the USB Wi-Fi module (EMIO-1533) on the daughterboard (EMIO-2004). Align the module's mounting holes with the standoff screw holes on the daughterboard then secure it with two screws.

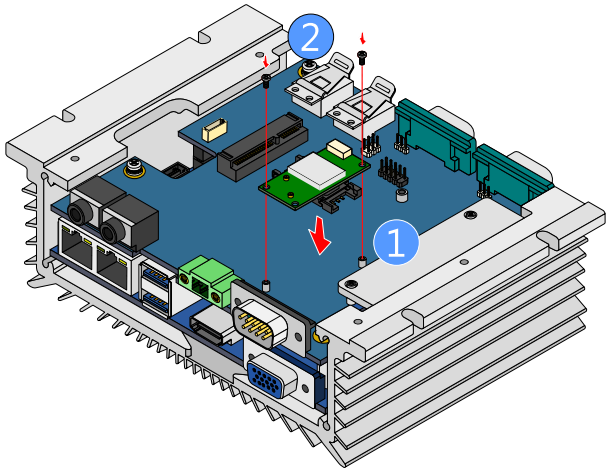

Figure 52: Installing USB Wi-Fi module

Step 2

Attach the USB Wi-Fi cable to the connector on USB Wi-Fi module (EMIO1533), and then attach the other end of the cable to the onboard USB Wi-Fi connector (JWLAN1) on the EMIO-2004 daughterboard.

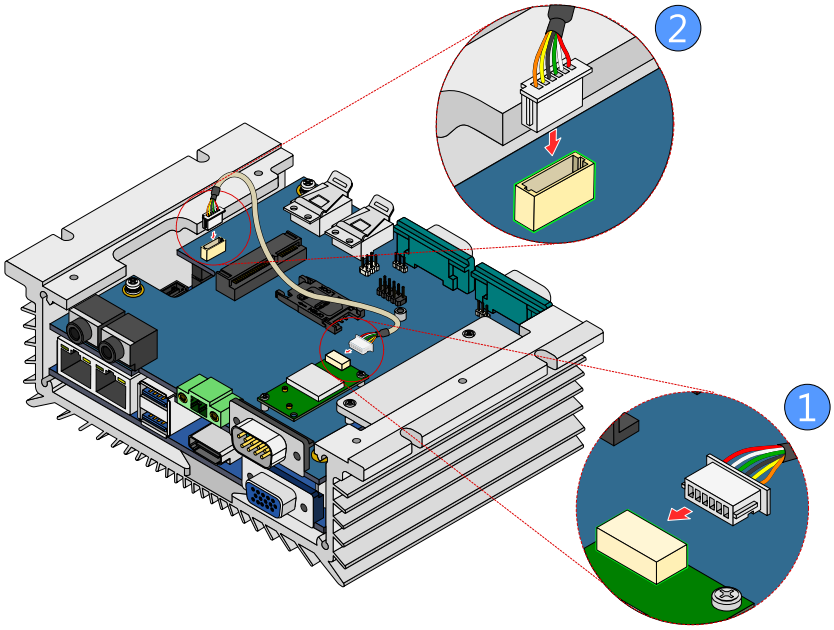

Figure 53: Connecting USB Wi-Fi cable

Step 3

Remove the Wi-Fi antenna hole cover from the front panel plate. To facilitate removing the cover, use a pair of needle-nose pliers to depress both locking clips simultaneously.

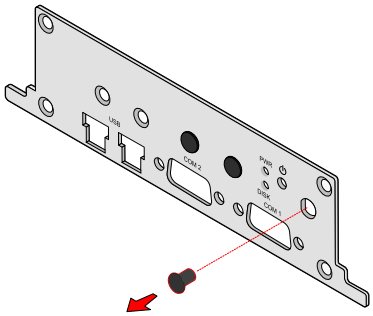

Figure 54: Removing the Wi-Fi antenna hole cover

Step 4

Insert the Wi-Fi antenna cable into the antenna hole from the inside of the front panel plate. Insert the washer, fasten it with the nut and install the external antenna. Pull the other end of the antenna cable and insert it to the available or suitable space going down to the bottom side of the system. Stretch the cable out to reach the installed USB Wi-Fi module. Then reinstall the front panel plate.

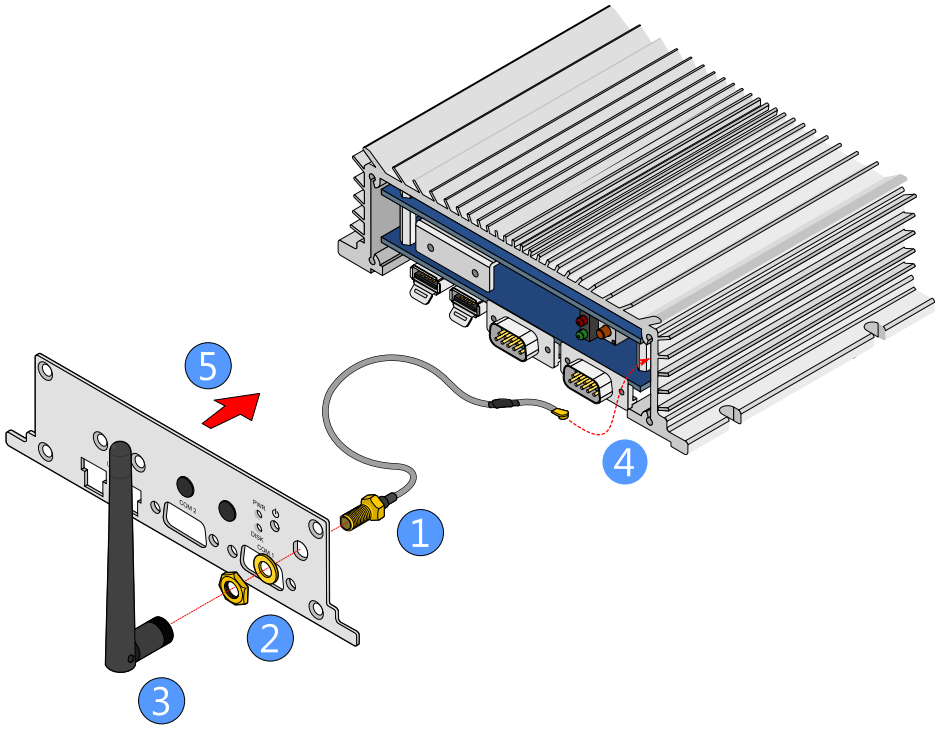

Figure 55: Installing the Wi-Fi antenna

Step 5

Gently connect the other end of the Wi-Fi antenna cable to the micro-RF connector labeled "MAIN" on the USB Wi-Fi module (EMIO-1533).

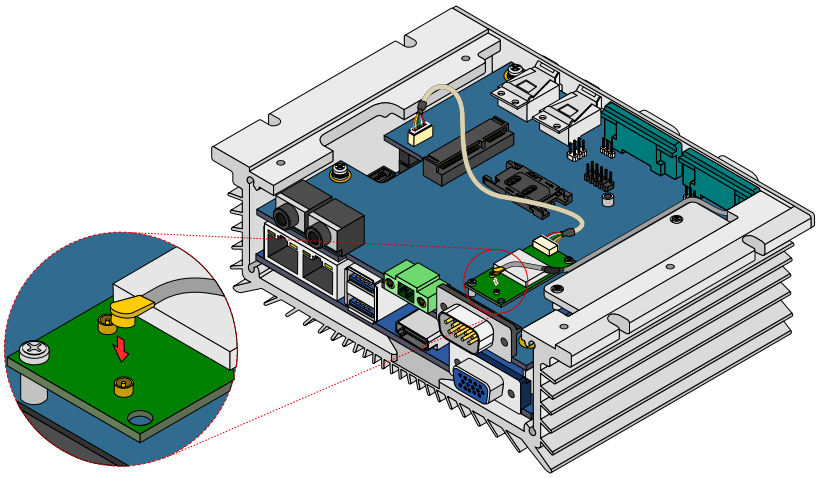

Figure 56: Connecting Wi-Fi antenna cable to micro RF connector

Step 6

Reinstall the back panel and bottom cover plates.

6.8. Installing the Rubber Feet

Optional rubber feet are available for AMOS-3005 system. It would make the AMOS-3005 system ideal to any flat surfaces such as desk or table.

Step 1

Locate the area to install the rubber feet.

Step 2

Attach carefully each rubber foot. Firmly press it down to ensure the rubber foot is properly in place.

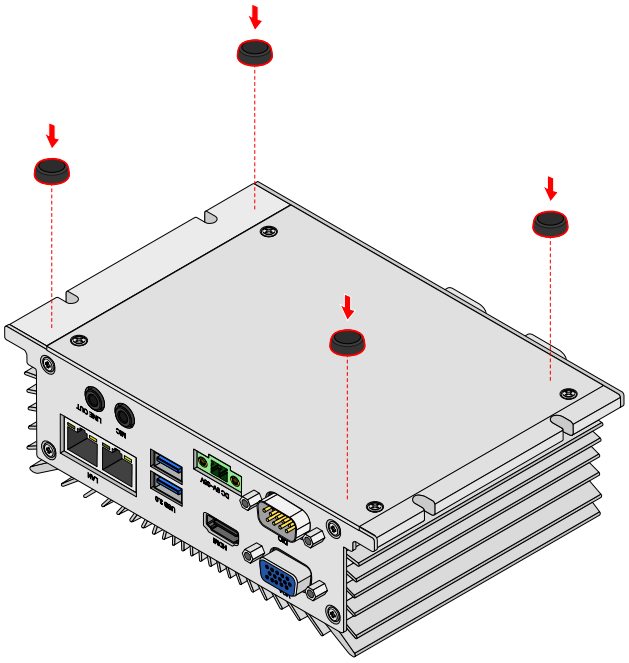

Figure 57: Installing the rubber feet

6.9. Installing the AMOS-3005

The AMOS-3005 system has multiple mounting options. Using four mounting screws, the AMOS-3005 system can be mounted on walls, tables or any suitable flat surfaces. In addition, the AMOS-3005 can be installed behind the display monitor using the optional VESA mounting kit.

Reminders:

1. Make sure to remove the rubber feet before mounting the AMOS-3005 system. The rubber feet are not required when securing the system on walls or tables.
2. Do not use other types of screws on mounting the AMOS-3005 system aside from the provided screws to avoid any damages.

6.9.1. Mounting the AMOS-3005 on Wall/Table

Step 1

Find a suitable surface to mount the AMOS-3005 system. Drill four holes on flat surface (wall/table). Ensure that holes diameter and the distance between holes perfectly match with the mounting bracket screws and mounting holes.

Step 2

Align the brackets mounting holes to the prepared screw holes.

Step 3

Install the AMOS-3005 and secure both mounting brackets to wall/table with four screws.

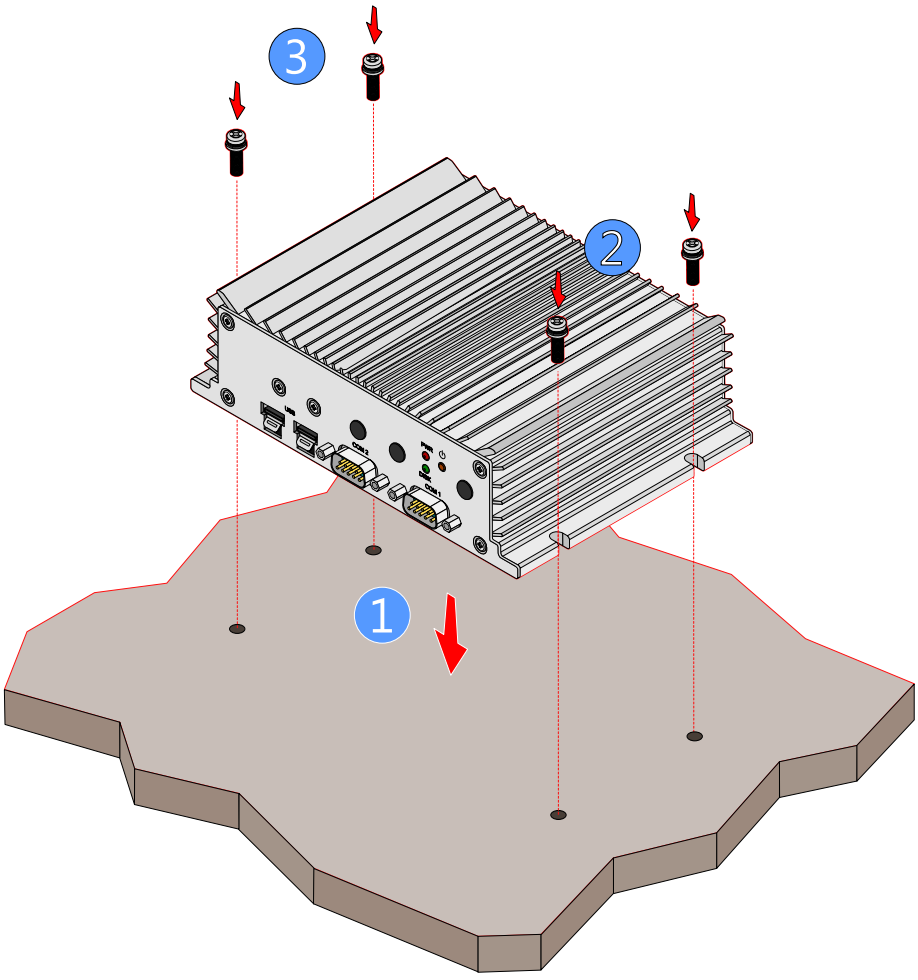

Figure 58: Mounting the AMOS-3005 system

6.9.2. Mounting the AMOS-3005 behind the monitor

Step 1

Align the mounting holes of the VESA mounting plate to the available VESA holes of the monitor display.

Step 2

Fasten the VESA mounting plate with four screws at the back of the monitor display.

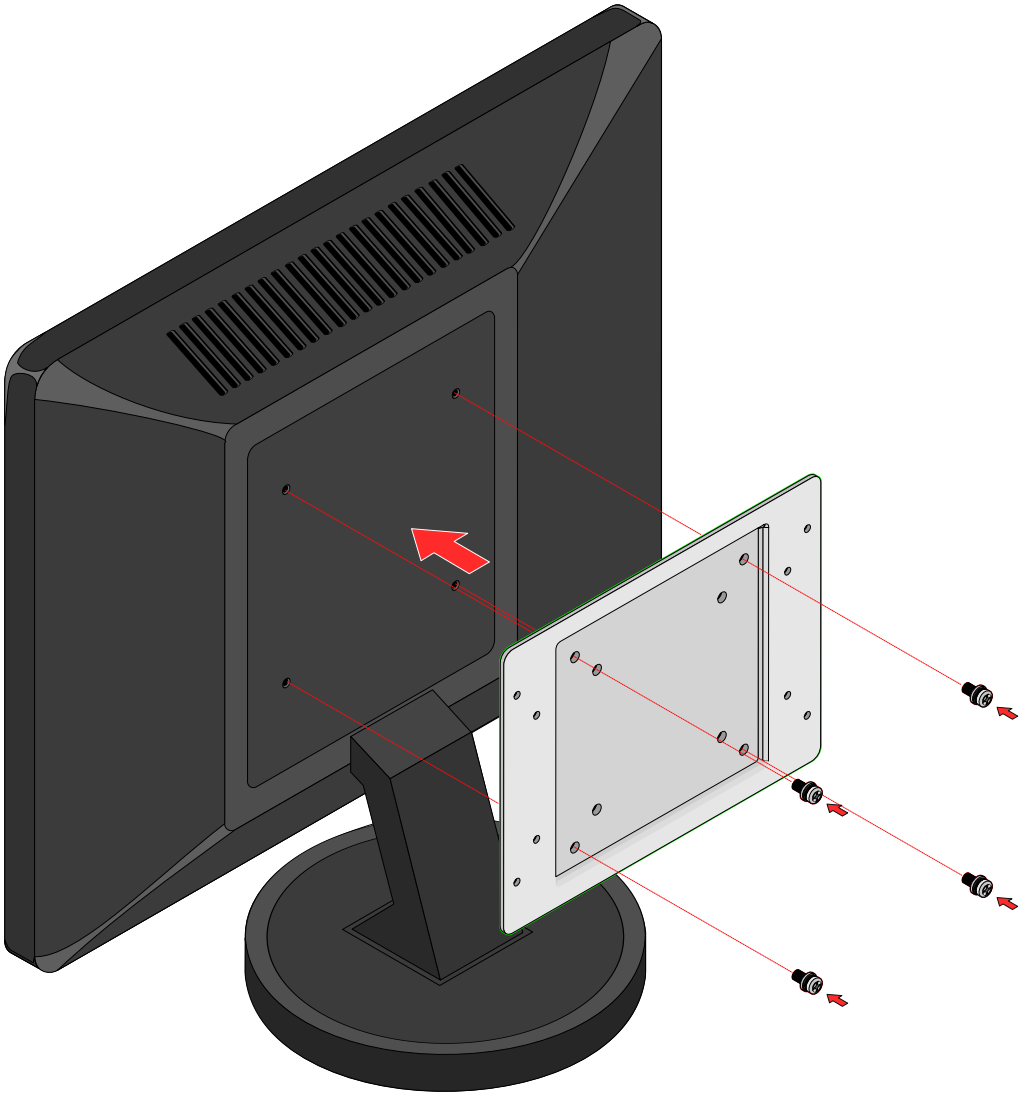

Figure 59: Installing VESA mounting plate

Step 3

Install the AMOS-3005 system to the VESA mounting plate.

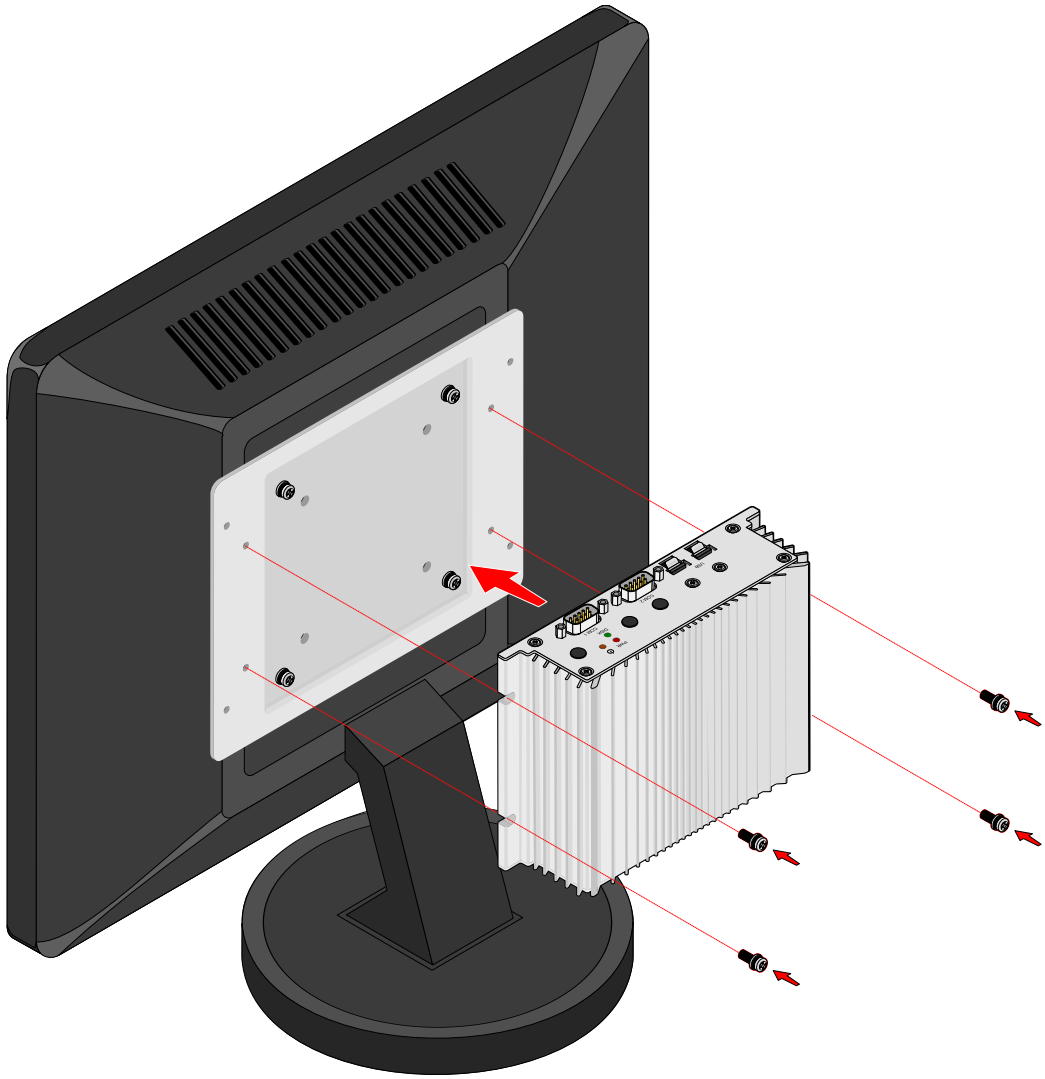

Figure 60: Installing AMOS-3005 to the VESA mounting plate

Step 4

Connect all the necessary cables.

7. BIOS Setup

This chapter gives a detailed explanation of the BIOS setup functions.

7.1. Entering the BIOS Setup Utility

Power on the computer and press **Delete** during the beginning of the boot sequence to enter the BIOS Setup Utility. If the entry point has passed, restart the system and try again.

7.2. Control Keys

Up	Move up one row
Down	Move down one row
Left	Move to the left in the navigation bar
Right	Move to the right in the navigation bar
Enter	Access the highlighted item / Select the item
Esc	Jumps to the Exit screen or returns to the previous screen
+[1]	Increase the numeric value
-[1]	Decrease the numeric value
F1	General help[2]
F2	Previous value
F3	Load optimized defaults
F4	Save all the changes and exit

Notes:

1. Must be pressed using the 10-key pad.
2. The General help contents are only for the Status Page and Option Page setup menus.

7.3. Getting Help

The BIOS Setup Utility provides a "**General Help**" screen. This screen can be accessed at any time by pressing **F1**. The help screen displays the keys for using and navigating the BIOS Setup Utility. Press **Esc** to exit the help screen.

7.4. System Overview

The System Overview screen is the default screen that is shown when the BIOS Setup Utility is launched. This screen can be accessed by traversing the navigation bar to the "Main" label.

Figure 61: Illustration of the Main menu screen

7.4.1. BIOS Information

The content in this section of the screen shows the information about the vendor, the Core version, UEFI specification version, the project version and date & time of the project build.

7.4.2. Memory Information

This section shows the amount of memory that is installed on the hardware platform.

7.4.3. System Language

This option allows the user to configure the language that the user wants to use.

7.4.4. System Date

This section shows the current system date. Press **Tab** to traverse right and **Shift+Tab** to traverse left through the month, day, and year segments. The **+** and **-** keys on the number pad can be used to change the values. The weekday name is automatically updated when the date is altered. The date format is [Weekday, Month, Day, Year].

7.4.5. System Time

This section shows the current system time. Press **Tab** to traverse right and **Shift+Tab** to traverse left through the hour, minute, and second segments. The **+** and **-** keys on the number pad can be used to change the values. The time format is [Hour : Minute : Second].

7.5. Advanced Settings

The Advanced Settings screen shows a list of categories that can provide access to a sub-screen. Sub-screen links can be identified by the preceding right-facing arrowhead.

Figure 62: Illustration of the Advanced Settings screen

The Advanced Settings screen contains the following links:

- ACPI Settings
- S5 RTC Wake Settings
- CPU Configuration
- SATA Configuration
- USB Configuration
- F71869 Super IO Configuration
- F71869 H/W Monitor
- Clock Generator Configuration

7.5.1. ACPI Settings

ACPI grants the operating system direct control over system power management. The ACPI Configuration screen can be used to set a number of power management related functions.

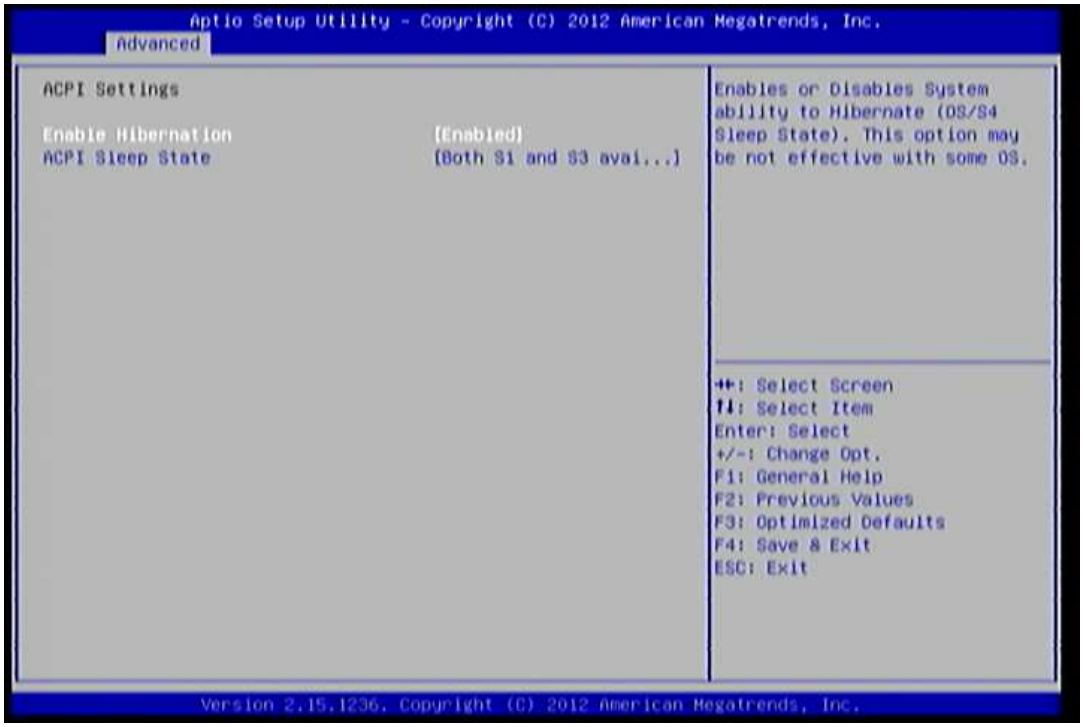

Figure 63: Illustration of the ACPI Settings screen

7.5.1.1. Enable Hibernation

Enable/disable system ability to Hibernate.

7.5.1.2. ACPI Sleep State

Except when selecting "Suspend Disabled", the system will enter into the corresponding sleep state when the Power button (configured as Standby / Sleep) is pressed or go to Standby / Sleep when the system is running under ACPI OS.

7.5.2. S5 RTC Wake Settings

The S5 RTC Wake Settings screen enables system to wake from S5 using RTC alarm

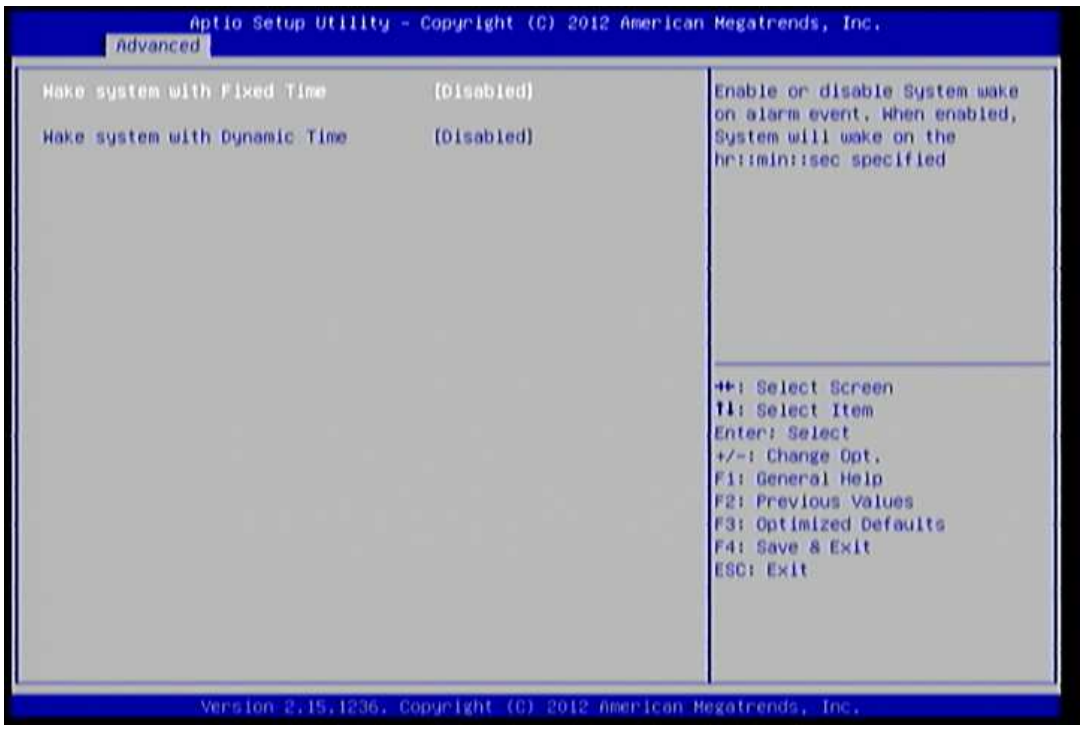

Figure 64: Illustration of the S5 RTC Wake Settings screen

7.5.2.1. Wake system with Fixed Time

Enable or disable system wake on alarm event. When enabled, system will wake on the date/ hr:min:sec specified. "0" means everyday.

7.5.2.2. Wake system with Dynamic Time

Enable or disable system wake on alarm event. When enabled, system will wake on the current time + Increase minutes. Available options are 1 – 5.

7.5.3. CPU Configuration

The CPU Configuration screen shows detailed information about the built-in processor.

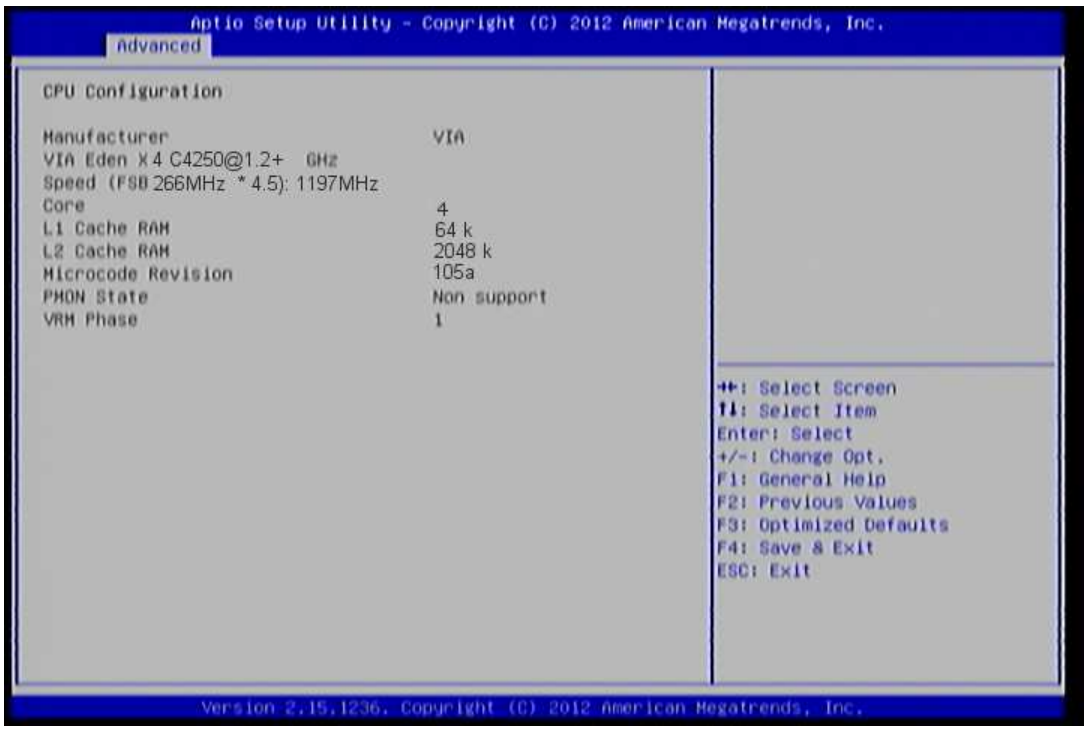

Figure 65: Illustration of CPU Configuration screen

7.5.4. SATA Configuration

The SATA Configuration screen allows the user to view and configure the SATA configuration settings.

Figure 66: Illustration of SATA Configuration screen

7.5.4.1. SATA Mode

This option allows the user to manually configure SATA controller for a particular mode.

IDE Mode
Set this value to change the SATA to IDE mode.

AHCI Mode
Set this value to change the SATA to AHCI mode.

7.5.5. USB Configuration

The USB Configuration screen shows the number of connected USB devices.

Figure 67: Illustration of USB Configuration screen

7.5.5.1. Legacy USB Support

The Legacy USB Support feature enables environments that do not have native USB support to use USB devices. This feature has three options.

Enabled
The Enabled option keeps the Legacy USB Support feature on at all times.

Disabled
The Disabled option keeps the Legacy USB Support feature off at all times.

Auto
The system automatically disables legacy support if no USB Devices are connected.

7.5.5.2. USB3.0 Support

Enable/Disable USB3.0 (XHCI) Controller support.

7.5.5.3. XHCI Hand-off

This is a workaround for Operating Systems without XHCI hand-off support. The XHCI ownership change should be claimed by XHCI driver.

7.5.5.4. EHCI Hand-off

This is a workaround feature for Operating Systems without EHCI hand-off support. The EHCI ownership change must be claimed by EHCI Driver.

Enabled
This option enables EHCI hand-off support.

Disabled
This option disables EHCI hand-off support.

7.5.5.5. USB Mass Storage Driver Support

Enable/Disable USB Mass Storage Driver Support.

7.5.6. F71869 Super IO Configuration

The F71869 Super IO Configuration screen allows the user to set system Super IO Chip parameters.

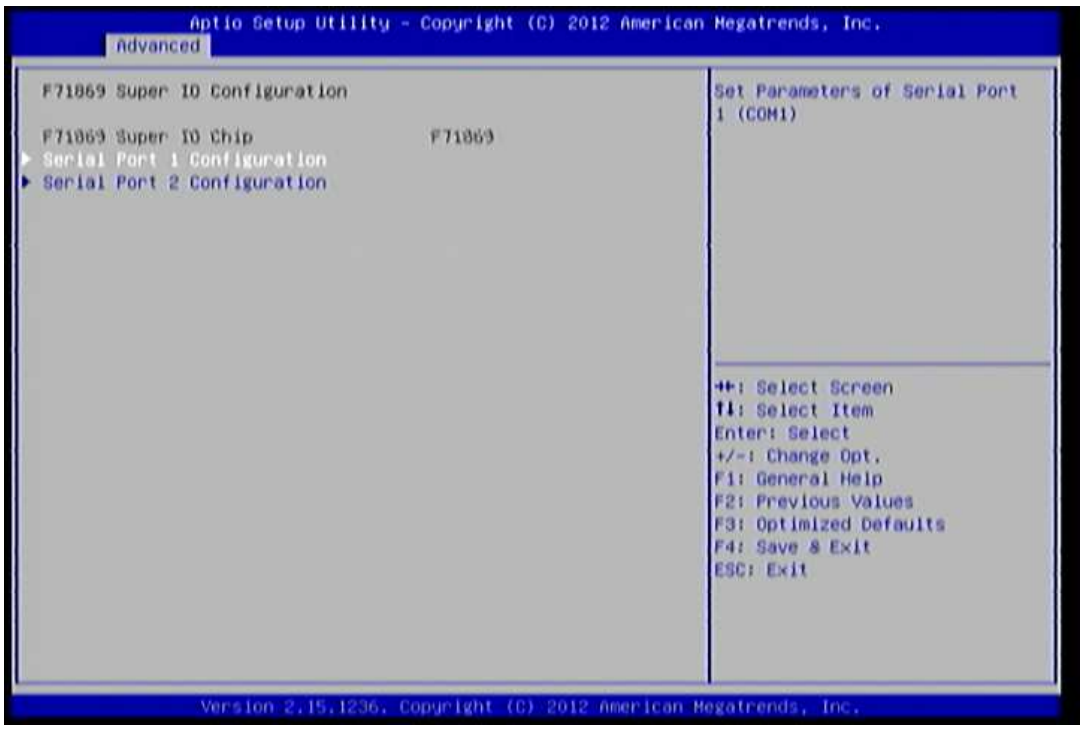

Figure 68: Illustration of F71869 Super IO Configuration screen

7.5.6.1. Serial Port 1 Configuration

Set parameters of Serial Port 1 (COM1).

7.5.6.1.1. Serial Port

Enable or Disable Serial Port (COM).

7.5.6.1.2. Uart Transmission Mode

Change the serial port transmission mode. This feature has 3 options: RS232/RS422/RS485.

7.5.6.2. Serial Port 2 Configuration

Set parameters of Serial Port 2 (COM2).

7.5.6.2.1. Serial Port

Enable or Disable Serial Port (COM).

7.5.6.2.2. Uart Transmission Mode

Change the serial port transmission mode. This feature has 3 options: RS232/RS422/RS485.

7.5.7. F71869 H/W Monitor

F71869 screen shows F71869 H/W Monitor status.

Figure 69: Illustration of F71869 H/W Monitor

7.5.8. Clock Generator Configuration

The Clock Generator Configuration screen enables access to the Spread Spectrum Setting feature.

Figure 70: Illustration of Clock Generator Configuration screen

7.5.8.1. CPU Spread Spectrum

The Spread Spectrum Setting feature enables the BIOS to modulate the clock frequencies originating from the mainboard. The settings are in percentages of modulation. Higher percentages result in greater modulation of clock frequencies. This feature has 3 options: Disabled, +-0.25% and -0.5%.

7.5.8.2. PCIe Spread Spectrum

Select PCIe Spread Spectrum. This feature has 2 options: Disabled and -0.5%.

7.6. Chipset Settings

The Chipset Settings screen shows a list of categories that can provide access to a sub-screen. Sub-screen links can be identified by the preceding right-facing arrowhead.

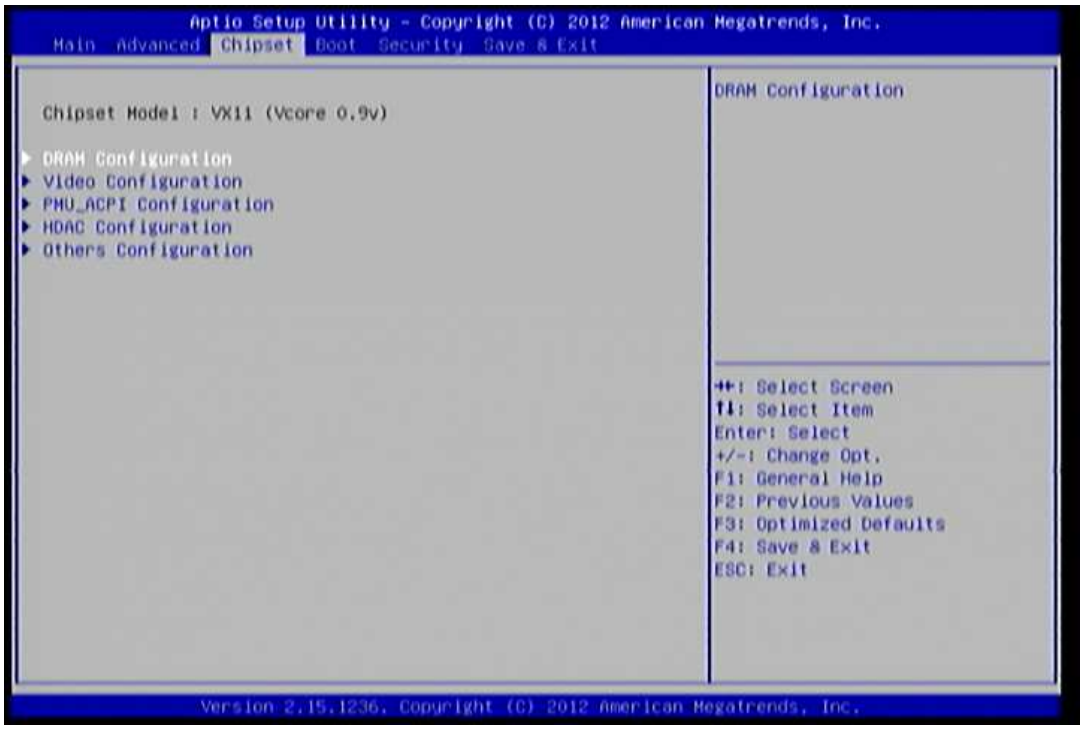

Figure 71: Illustration of Chipset Settings screen

The Chipset Settings screen contains the following links:

- DRAM Configuration
- Video Configuration
- PMU-ACPI Configuration
- HDAC Configuration
- Others Configuration

7.6.1. DRAM Configuration

The DRAM Configuration screen has two features for controlling the system DRAM. All other DRAM features are automated and cannot be accessed.

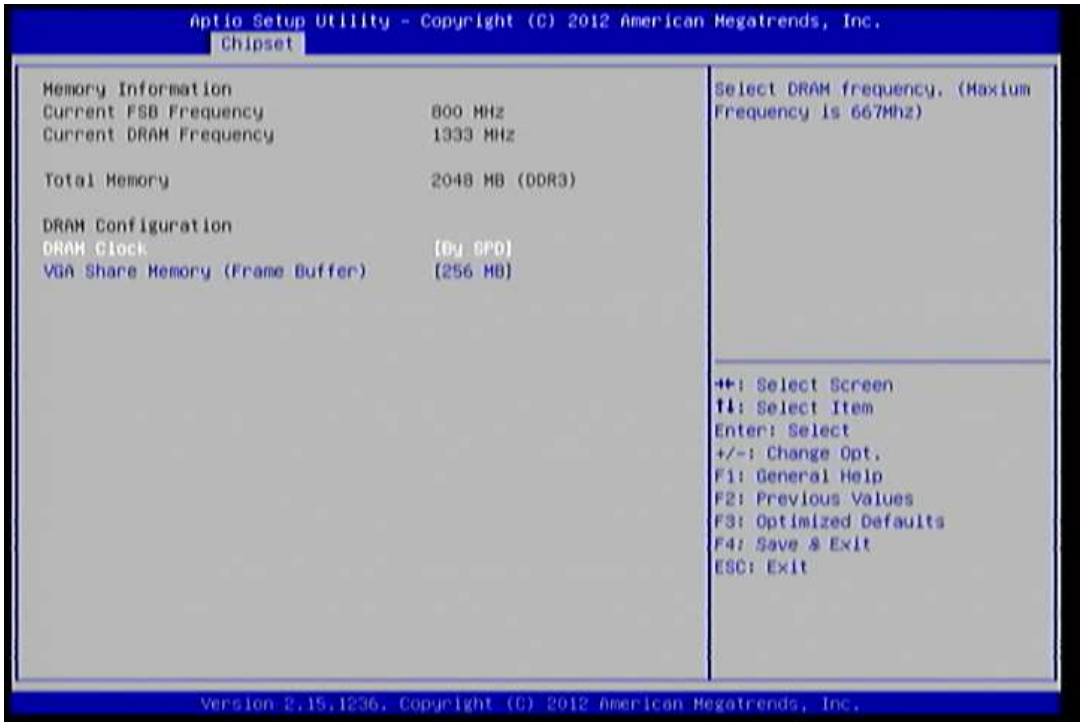

Figure 72: Illustration of DRAM Configuration screen

7.6.1.1. DRAM Clock

The DRAM Clock option enables the user to determine how the BIOS handles the memory clock frequency. The memory clock can either be dynamic or static. This feature has eleven options.

By SPD

By SPD option enables the BIOS to select a compatible clock frequency for the installed memory.

400 MHz

The 400MHz option forces the BIOS to be fixed at 800MHz for DDR3 memory modules.

533 MHz

The 533MHz option forces the BIOS to be fixed at 1066MHz for DDR3 memory modules.

667 MHz

The 667MHz option forces the BIOS to be fixed at 1334MHz for DDR3 memory modules.

7.6.1.2. VGA Share Memory (Frame Buffer)

The VGA Share Memory feature enables the user to choose the amount of the system memory to reserve for use by the integrated graphics controller. The selections of memory amount that can be reserved are 256MB and 512MB.

7.6.2. Video Configuration

The Video Configuration screen has features for controlling the integrated graphics controller in the VX11 chipset.

Figure 73: Illustration of Video Configuration screen

7.6.2.1. Select Display Device Control

Select VX11 Display Device Control. Available options are: Auto and Manual.

7.6.2.2. Select Display Device 1 and 2

The Select Display Device feature enables the user to choose a specific display interface. This feature has two options: CRT and HDMI. If both Select Display Device 1 and Select Display Device 2 are set to the same interface, then any display device connected to the other interface will not function. For example, if both Select Display 1 and 2 are set to CRT, then no data will be sent to the HDMI port.

7.6.3. PMU_ACPI Configuration

The PMU_ACPI Configuration screen can be used to set a number of power management related functions.

Figure 74: Illustration of PMU_ACPI Configuration screen

7.6.3.1. AC Loss Auto-restart

AC Loss Auto-restart defines how the system will respond after AC power has been interrupted while the system is on. There are three options.

Power Off

The Power Off option keeps the system in an off state until the power button is pressed again.

Power On

The Power On option restarts the system when the power has returned.

Last State

The Last State option restores the system to its previous state when the power was interrupted.

7.6.3.2. USB S4 WakeUp

The USB S4 WakeUp enables the system to resume through the USB device port from S4 state. There are two options: “Enabled” and “Disabled”.

7.6.4. HDAC Configuration

HDAC Configuration Parameters.

Figure 75: Illustration of HDAC Configuration screen

7.6.4.1. OnChip HDAC Device

This feature has 2 options: Enable or Disable HDAC Control.

7.6.5. Others Configuration

The Others Configuration screen can be used to set Watchdog Timer Configuration.

Figure 76: Illustration of Others Configuration screen

7.6.5.1. WATCHDOG Timer Enable

The WATCHDOG Timer Enable feature unlocks three other features that enable the BIOS to monitor the state of the system. This feature has two options: enabled or disabled.

7.6.5.2. WATCHDOG Timer RUN/STOP

The WATCHDOG Timer RUN/STOP feature controls if the WATCHDOG timer is active or dormant. This feature has two options: stop and run.

7.6.5.3. WATCHDOG Timer ACTION

The WATCHDOG Timer ACTION feature determines the action the WATCHDOG timer should take if the timer counts down to zero. This feature has two options: reset and power off.

7.6.5.4. WATCHDOG Timer COUNT

The WATCHDOG Timer COUNT feature determines the length of time the timer should count when the timer is first triggered. This feature has four options: 72, 389, 706, and 1023 seconds.

7.7. Boot Settings

The Boot Settings screen has a single link that goes to the **Boot Configuration** and **Boot Option Priorities** screens.

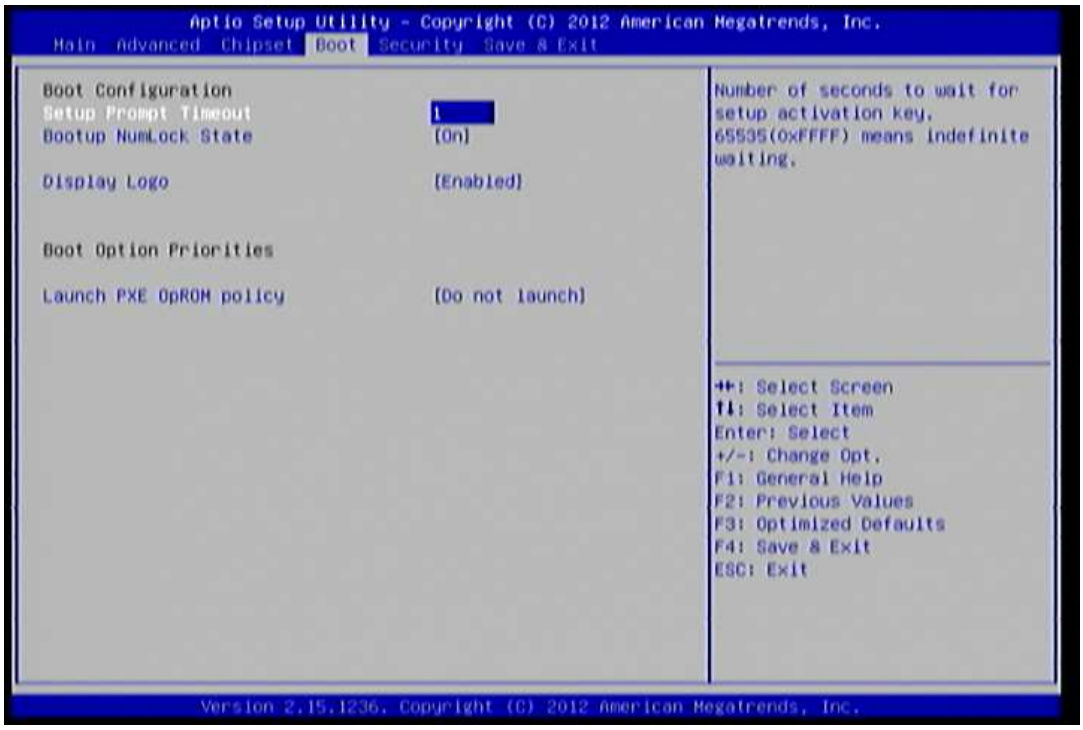

Figure 77: Illustration of Boot Settings screen

7.7.1. Boot Configuration

The Boot Settings Configuration screen has several features that can be run during the system boot sequence.

7.7.1.1. Setup Prompt Timeout

Number of seconds to wait for setup activation key. 65535(0xFFFF) means indefinite waiting.

7.7.1.2. BootupNumLock State

Select the keyboard NumLock state from On and Off.

7.7.1.3. Display Logo

The Display Logo feature hides all of the Power-on Self Test (POST) messages during the boot sequence. Instead of the POST messages, the user will see an OEM logo. This feature has two options: enabled and disabled.

7.7.2. Boot Option Priorities

The Boot Option Priorities screen lists all bootable devices.

7.7.2.1. Launch PXE OpROM policy

Do not launch
Prevent the option for Legacy Network Device.

Legacy only
Allow the option for Legacy Network Device.

7.8. Security Settings

The Security Settings screen provides a way to restrict access to the BIOS or even the entire system.

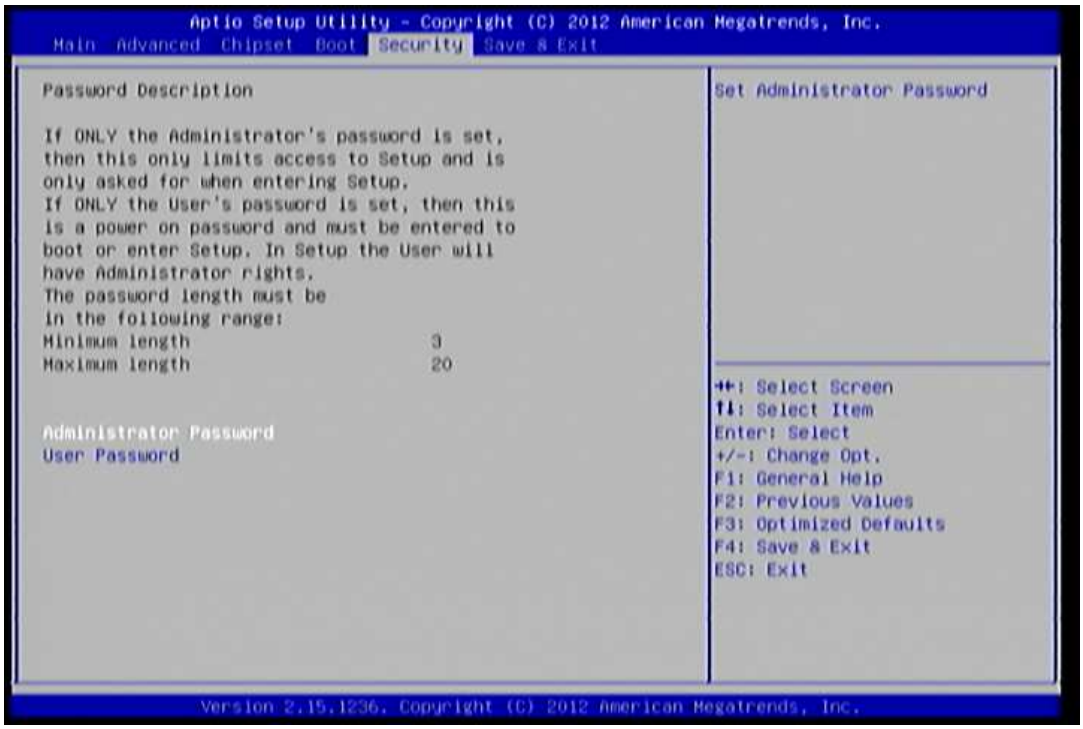

Figure 78: Illustration of Security Settings screen

7.8.1. Security Settings

7.8.1.1. Administrator Password/User Password

This option is for setting a password for accessing the BIOS setup utility. When a password has been set, a password prompt will be displayed whenever the BIOS setup utility is launched. This prevents an unauthorized person from changing any part of the system configuration.

When a supervisor password is set, the **Password Check** option will be unlocked.

7.9. Save & Exit

The Save & Exit Configuration screen has the following features:

Figure 79: Illustration of Save & Exit screen

7.9.1. Save Changes and Exit

Save all changes to the BIOS and exit the BIOS Setup Utility. The "F4" hotkey can also be used to trigger this command.

7.9.2. Discard Changes and Exit

Exit the BIOS Setup Utility without saving any changes. The "Esc" hotkey can also be used to trigger this command.

7.9.3. Save Changes and Reset

Save all changes to the BIOS and reboot the system. The new system configuration parameters will take effect.

7.9.4. Discard Changes and Reset

This command reverts all changes to the settings that were in place when the BIOS Setup Utility was launched.

Save Options

7.9.5. Save Changes

Save Changes done so far to any of the setup options.

7.9.6. Discard Changes

This command reverts all changes to the settings that were in place when the BIOS Setup Utility was launched.

Restore Default

7.9.7. Save as User Defaults

Save the changes done so far as User Defaults.

7.9.8. Restore User Defaults

Restore the User Defaults to all the setup options.

Boot Override

Launch EFI Shell from filesystem device

8. Software and Technical Supports

8.1. Microsoft and Linux Support

The VIA AMOS-3005 is highly compatible with Microsoft Windows and Linux operating systems.

8.1.1. Driver Installation

Microsoft Driver Support

The latest Windows drivers can be downloaded from the VIA website at www.viatech.com

Linux Driver Support

Linux drivers are provided through various methods including:

- Drivers provided by VIA
- Using a driver built into a distribution package
- Visiting www.viatech.com for the latest updated drivers
- Installing a third party driver (such as the ALSA driver from the Advanced Linux Sound Architecture project for integrated audio)

8.2. Technical Supports and Assistance

- For utilities downloads, latest documentation and new information about the AMOS-3005, go to http://www.viatech.com/en/systems/industrial-fanless-pcs/AMOS-3005
- For technical support and additional assistance, always contact your local sales representative or board distributor, or go to http://www.viatech.com/en/about/contact/ to fill up the form request.
- For OEM clients and system integrators developing a product for long term production, other code and resources may also be made available. Contact VIA to submit a request.

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