NEC Micro PC

Installation Manual

Copyright Notice

Acknowledgments

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
This device may not cause harmful interference.
This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.

➢ Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.

➢ This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

➢ This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

WARNING! The use of shielded cables for connection of the monitor to the graphics card is required to assure compliance with FCC regulations. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

DO NOT throw the motherboard in municipal waste. This product has been designed to enable proper reuse of parts and recycling. This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

DO NOT throw the mercury-containing button cell battery in municipal waste. This symbol of the crossed out wheeled bin indicates that the battery should not be placed in municipal waste.

部件名稱	有害物質					
	鉛 (Pb)	汞 (Hg)	鎘 (Cd)	六價鉻 (Cr(VI))	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
印刷電路板及其電子組件	×	○	○	○	○	○
外殼	×	○	○	○	○	○
電源適配器	×	○	○	○	○	○
外部信號連接頭及線材	×	○	○	○	○	○
中央處理器與內存	×	○	○	○	○	○

本表格依據 SJ/T 11364 的規定編制。

○：表示該有害物質在該部件所有均質材料中的含量均在 GB/T 26572 規定的限量要求以下。

×：表示該有害物質至少在該部件的某一均質材料中的含量超出 GB/T 26572 規定的限量要求，然該部件仍符合歐盟指令 2011/65/EU 的規范。

備註：此產品所標示之環保使用期限，係指在一般正常使用狀況下。

Table of Content

Chapter 1

This chapter gives a general description of the NEC Micro PC. The chapter lists the system features including introduction on the front and rear panel, and internal components.

System Introduction

1.1 Welcome!

Your Box PC comes in a stylish casing and with a motherboard that supports the Intel® Atom x5-Z8350 Processor.
The system supports up to 64G onboard eMMC storage, 4GB DDR3L memory. It features onboard WiFi and Bluetooth, LAN, COM port, USB 3.0/2.0 ports for plug-and-play connectivity solutions for your USB 3.0/2.0 devices.

System package contents

Check your Box PC system package for the following items.

☞ **If any of the items is damaged or missing, contact your retailer immediately.**

No.	Item	Qty.	Photo
1	NEC Box PC	1	
2	5V/4A Power Adapter	1	
3	Mounting Bracket	1	
4	HDMI cable	1	
5	USB cable	1	
6	WiFi Antenna	2	
7	M3 screw	4	
8	M3 bracket standoff	4	
9	M4 screw	7	
10	Rubber foot	4	

NEC Micro PC User Manual

1.2 Getting to know your Box PC
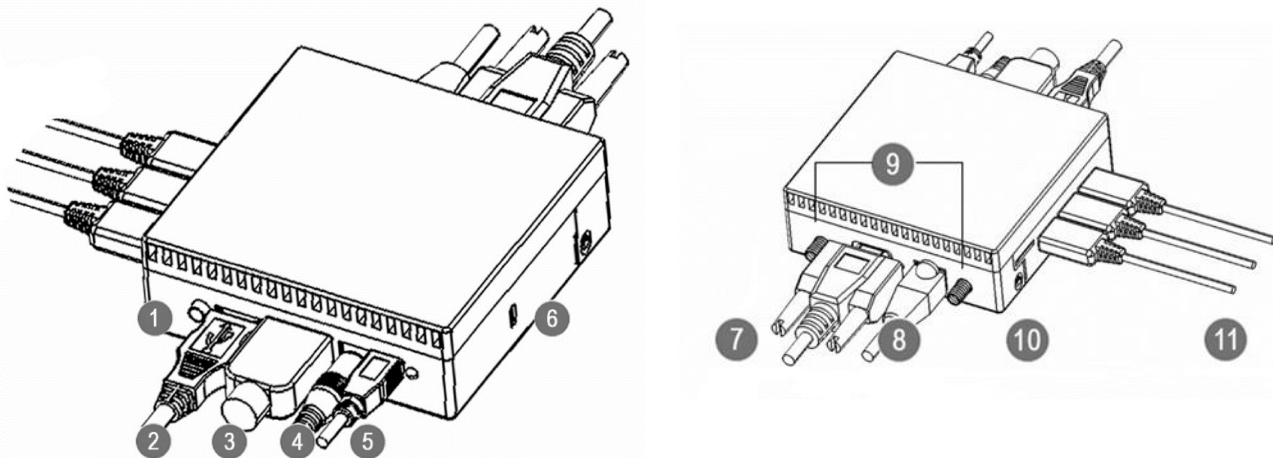
1. Power Button	4. Power input (DC 5V/4A)	7. RS232	10. Micro SD-Card
2. USB 3.0	5. Micro USB (DC 5V/2A)	8. LAN (RJ45) port	11. 3 x USB 2.0
3. HDMI	6. Kensington lock	9. Antenna connector	

1. **Power Button:** This button is for switching on/off the power supply unit.
2. **USB 3.0 port:** This USB 3.0 port connects to USB 2.0/3.0 devices.
3. **HDMI:** This port is for HDMI display.
4. **Power input (DC 5V/4A)**
5. **Micro USB (DC 5V/2A)**
6. **Kensington lock:** This is a metal anchor to lock your device on the table as an anti-theft solution.
7. **RS232:** This is a COM port which supports RS232.
8. **LAN (RJ45) port:** This port allows gigabit connection to a Local Area Network (LAN) through a network hub.
9. **Antenna connector:** This connector is for antenna.
10. **Micro SD card**
11. **USB 2.0 port:** This USB 2.0 port connects to USB 2.0 devices.

Chapter 2

This chapter provides step-by- step instructions on how to install components in the system.

Basic Introduction

2.1 Preparation

Before you proceed, make sure you have all the components you plan to install in the system.

Basic components

No.	Item	Qty.	Photo
1	Mounting Bracket	1	
2	WiFi Antenna	2	
3	M3 screw	4	
4	M3 bracket standoff	4	

Tool: Cross screw driver

2.2 Before you proceed

Take note of the following precautions before you install components into the system.

> Use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, before handling components to avoid damaging them due to static electricity.
> Hold components by the edges to avoid touching the ICs on them.
> Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.

NEC Micro PC User Manual

2.3 Installing your Box PC

Installing the mounting bracket on multi-display:

A. How to fasten the bracket on the back of TV?
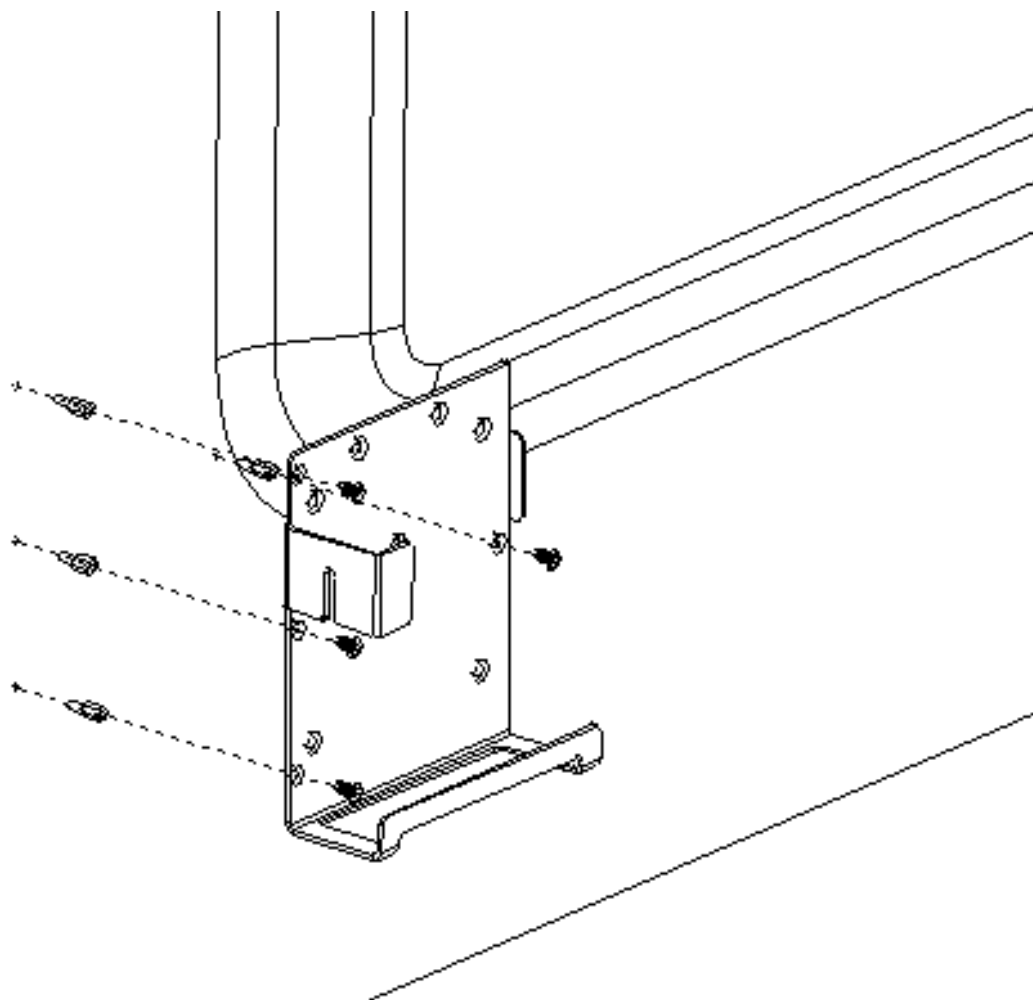
1. Get your bracket ready.
2. Fasten the 4pcs M3 bracket standoffs on the back of your NEC TV device.
3. Secure the bracket to the standoffs with M3 screws.
4. Done.

B. How to fasten the bracket on the back of other panels?
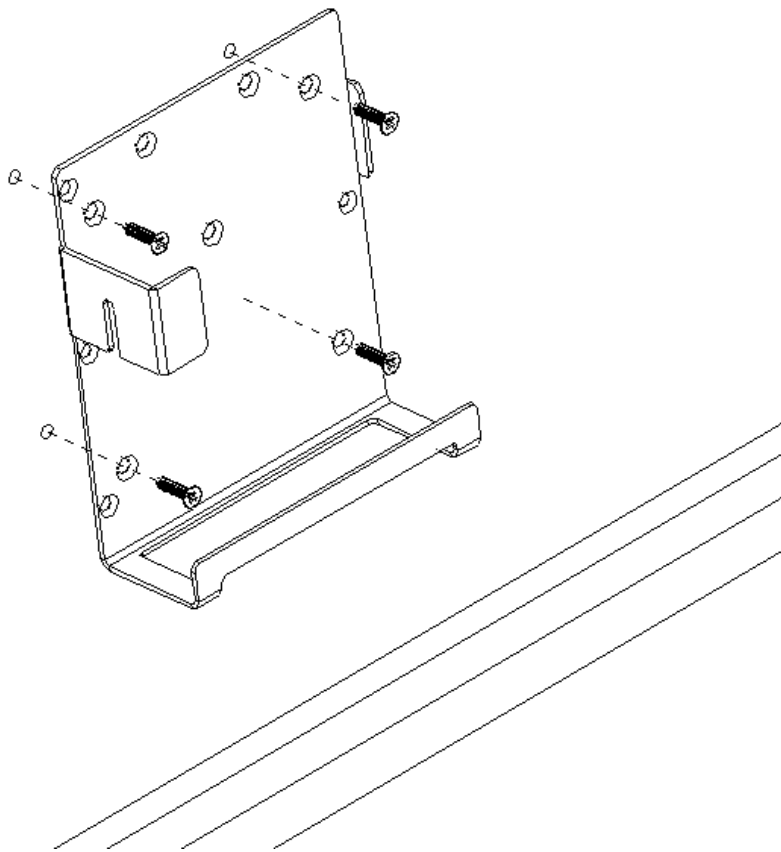
1. Get your bracket ready.
2. Fasten the bracket with 4pcs M4 screws on the back of your panel device.
3. Done.

Installing your Box PC in mounting bracket:

A. Antenna going upwards
Carefully insert your Box PC to the bracket with antennas side going upwards on the back of your device.
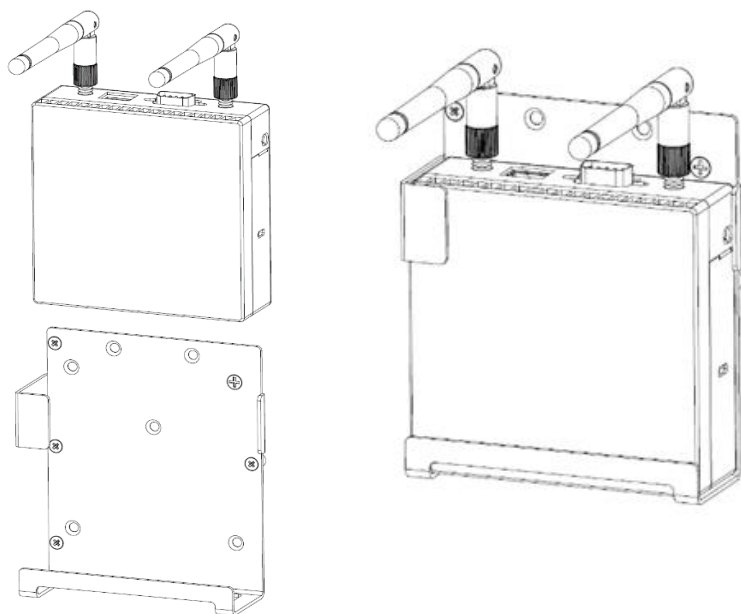
B. Antenna going downwards
Carefully insert your Box PC to the bracket with antennas side going downwards on the back of your device.

NOTE: Please straighten the antennas to pass through the bracket before inserting the Box PC. Or, the bracket may damage the antennas.

NEC Micro PC User Manual
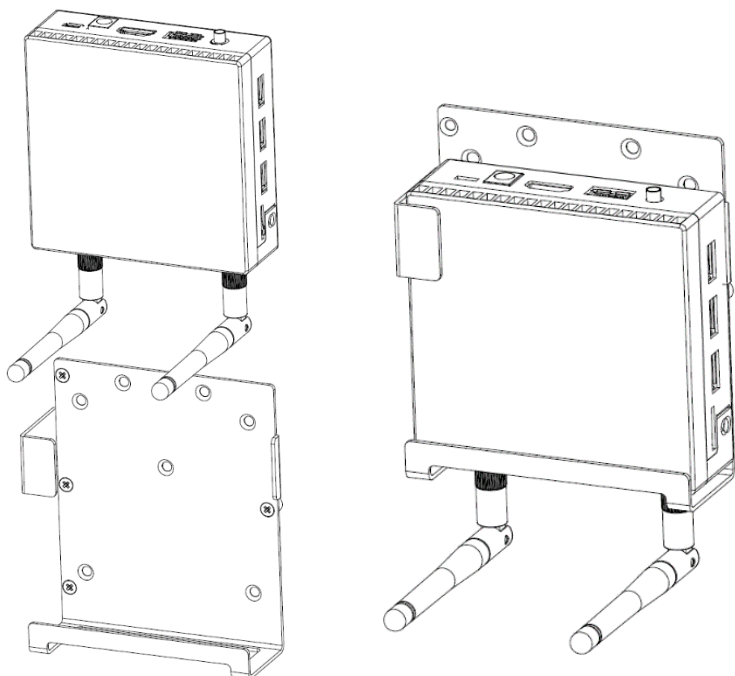
Chapter 3

This chapter gives information about the motherboard that comes with the system. This chapter includes the motherboard layout, jumper settings, and connector locations.

Motherboard Info

3.1 Motherboard layout

The Box PC system comes with a motherboard. This chapter provides technical information about the motherboard for future upgrades or system reconfiguration.
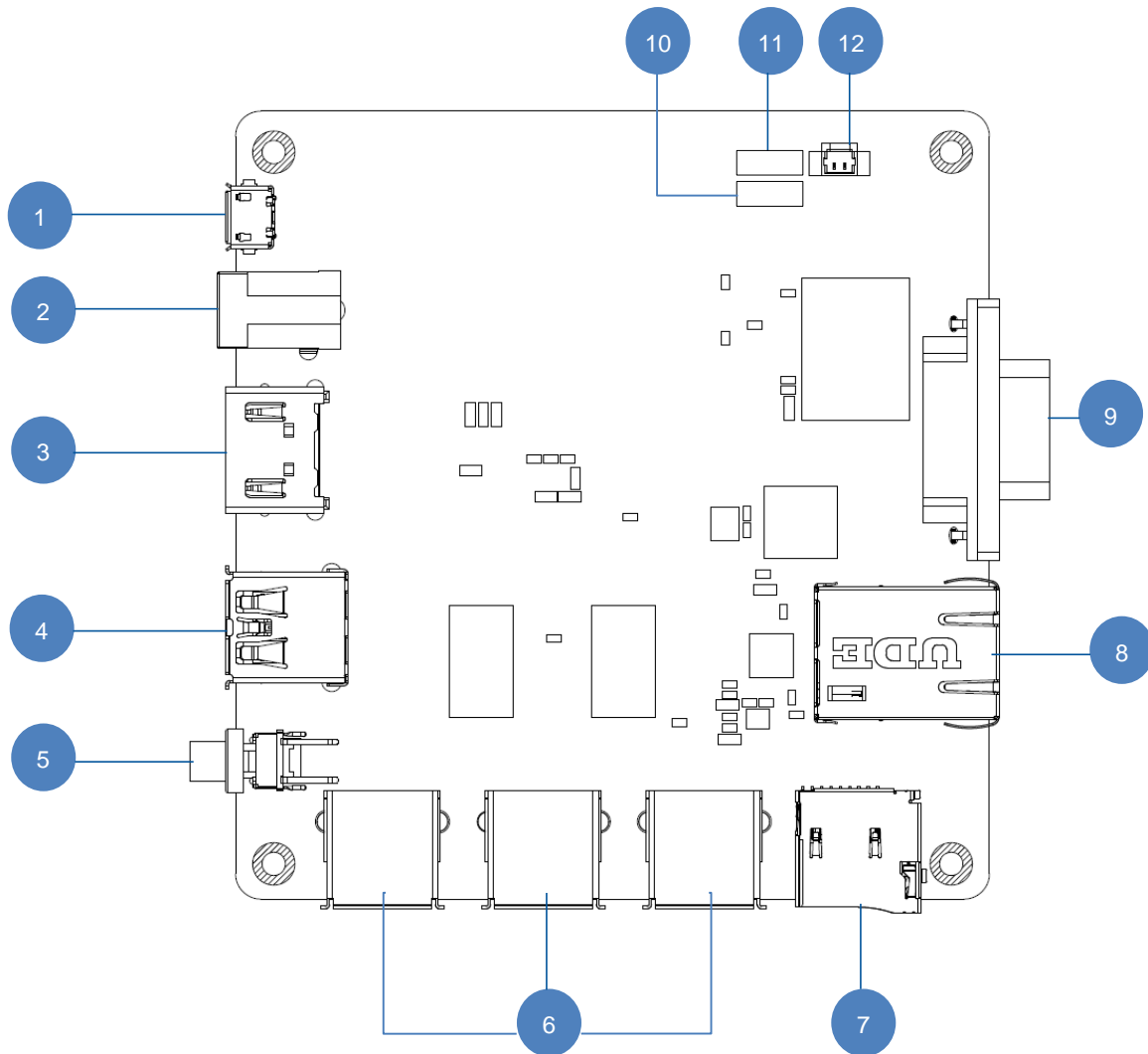
3.2 Connector Index

No.	Functional Description	Connector Type
1	Micro USB DC-IN	ATTEND.207A-BAB0-01
2	DC-IN	416AEWTJ02004PA
3	HDMI	QJ51191-LFB4-7F
4	USB3.0	930-00406-A91-21
5	Power Button Header	712-71-02TW01
6	USB2.0	235F304-0N143T-R
7	Micro SD	ATTEND.112J-TDAR-R01
8	RJ45	UDE.RB1-1A5BAK1A
9	RS-232	DRD-9P
10	Debug UARTCONNECTOR	712-71-05TW01
11	BIOS Programing Header	27-4121-206-1G-R
12	RTC Battery	712-71-02TW01

3.3 Connector Pin Assignments

3.3.1 Debug UART (#10)
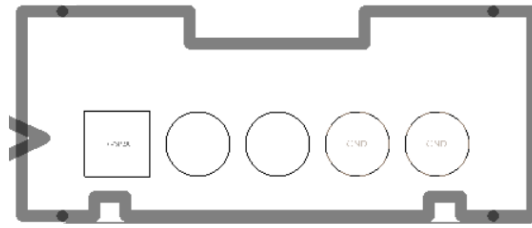
Pin	Signal Description	Pin	Signal Description
1	+V3P3A	2	UART0_TXD
3	UART0_RXD	4	GND
5	GND		

3.3.2 Micro SD Card Connector (#7)
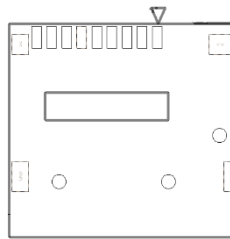
Pin	Signal Description	Pin	Signal Description
1	SDMMC3_DATA2_MICROCONN	2	SDMMC3_DATA3_MICROCONN
3	SDMMC3_CMD_MICROCONN	4	SD_VCC_R
5	SDMMC3_CLK_MICROCONN	6	GND
7	SDMMC3_DATA0_MICROCONN	8	SDMMC3_DATA1_MICROCONN
9	SDMMC3_CD_MICROCONN	10	GND

3.3.3 RS-232 Connector (#9)
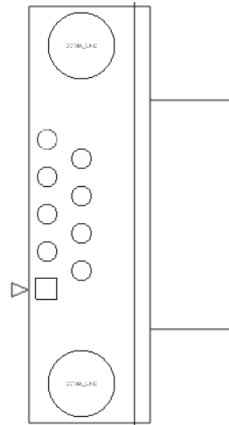
Pin	Signal Description
1	DCDA
2	RXA
3	TXA
4	DTRA
5	GND
6	DSRA
7	RTSA
8	CTSA
9	RIA

3.3.4 RJ45 LAN Port (#8)
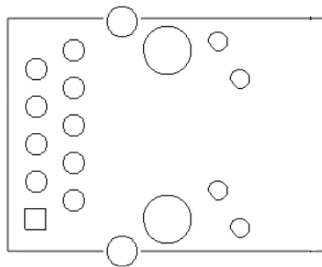
Pin	Signal Description
1	LAN1_TMDI0+
2	LAN1_TMDI0-
3	LAN1_TMDI1+
4	LAN1_TMDI2+
5	LAN1_TMDI2-
6	LAN1_TMDI1-
7	LAN1_TMDI3+
8	LAN1_TMDI3-

3.3.5 Micro USB DC-IN (#1)
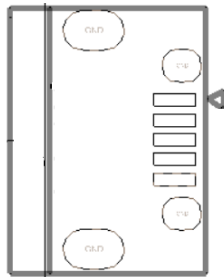
Pin	Signal Description
1	+VIN_USB
2	NC
3	NC
4	NC
5	GND

3.3.6 RTC Battery (#12)
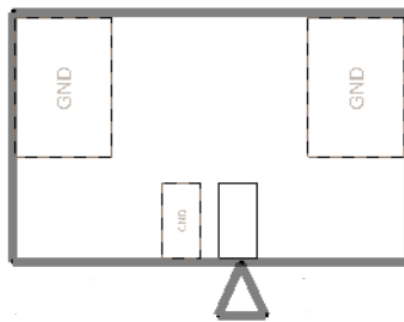
Pin	Signal Description
1	+VRTC
2	GND

Chapter 4

This chapter provides step-by- step instructions on how to install components in the system.

4.1 BIOS setup program

Use the BIOS Setup program to update the BIOS or configure its parameters. The BIOS screens include navigation keys and brief online help to guide you in using the BIOS Setup program.

Entering BIOS Setup at startup

To enter BIOS Setup at startup:

Press <Delete> during the Power-On Self Test (POST). If you do not press<Delete>, POST continues with its routines.

Entering BIOS Setup after POST

To enter BIOS Setup after POST:

Press **<Ctrl>+<Alt>+<Del>** simultaneously.

Press the reset button on the system chassis.

Press the power button to turn the system off then back on. Do this option only if you failed to enter BIOS Setup using the first two options.

⚠️ Using the power button, reset button, or the **<Ctrl>+<Alt>+<Del>** keys to force reset from a running operating system can cause damage to your data or system. We recommend to always shut down the system properly from the operating system.

IMPORTANT:

The default BIOS settings for this motherboard apply to most working conditions and ensures optimal performance. If the system becomes unstable after changing any BIOS settings, load the default settings to regain system stability. Select the option Restore Defaults under the Save & Exit Menu. See section 4.7 Save & Exit Menu.

The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.

4.1.1 BIOS menu screen
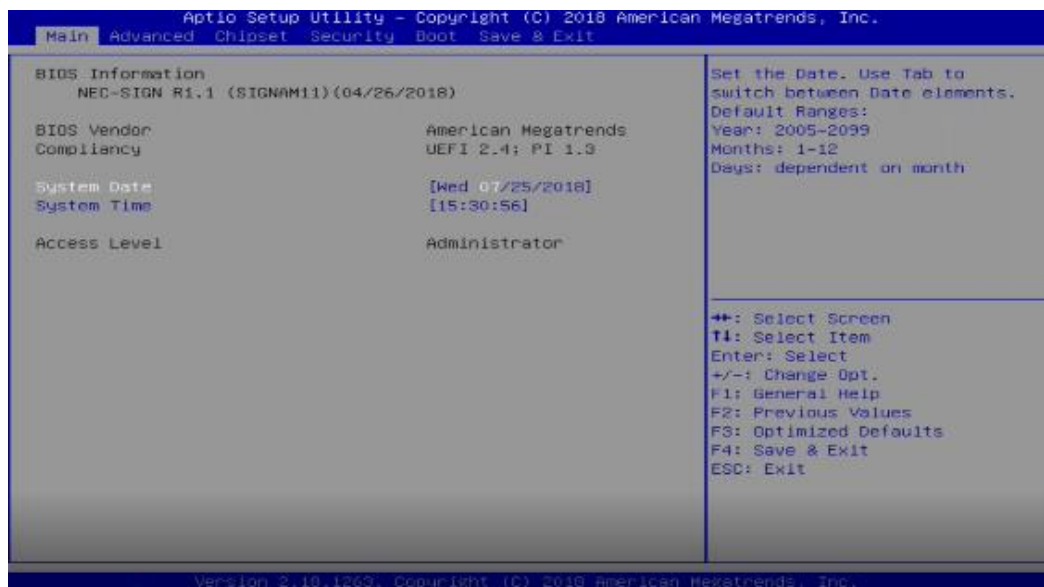
4.1.2 Menu bar

The menu bar on top of the screen has the following main items:

Main	For changing the basic system configuration.
Advanced	For changing the advanced system settings.
Chipset	For viewing and changing chipset settings.
Security	For setting up BIOS security settings.
Boot	For changing the system boot configuration.
Save & Exit	For selecting the exit options and loading default settings.

To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted.

4.2 Main menu

When you enter the BIOS Setup program, the **Main menu** screen appears, giving you an overview of the basic system information.

Refer to section **4.1.1 BIOS menu screen** for information on the menu screen items and how to navigate through them.
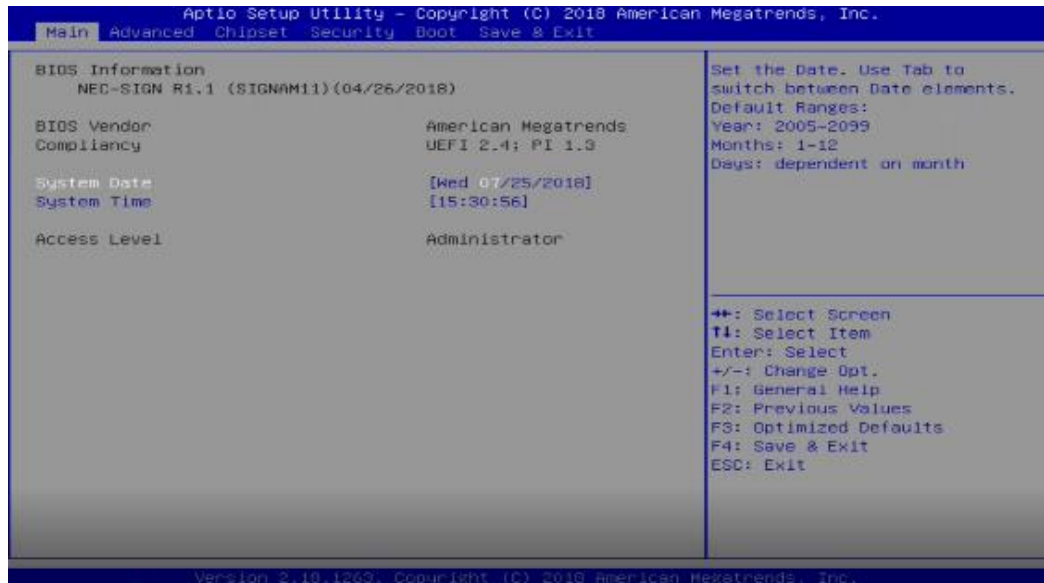
4.2.1 System Date [Day xx/xx/xxxx]

Allows you to set the system date.

4.2.2 System Time [xx:xx:xx]

Allows you to set the system time.

4.3 Advanced menu

The **Advanced menu** items allow you to change the settings for the CPU and other system devices.

⚠ Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.
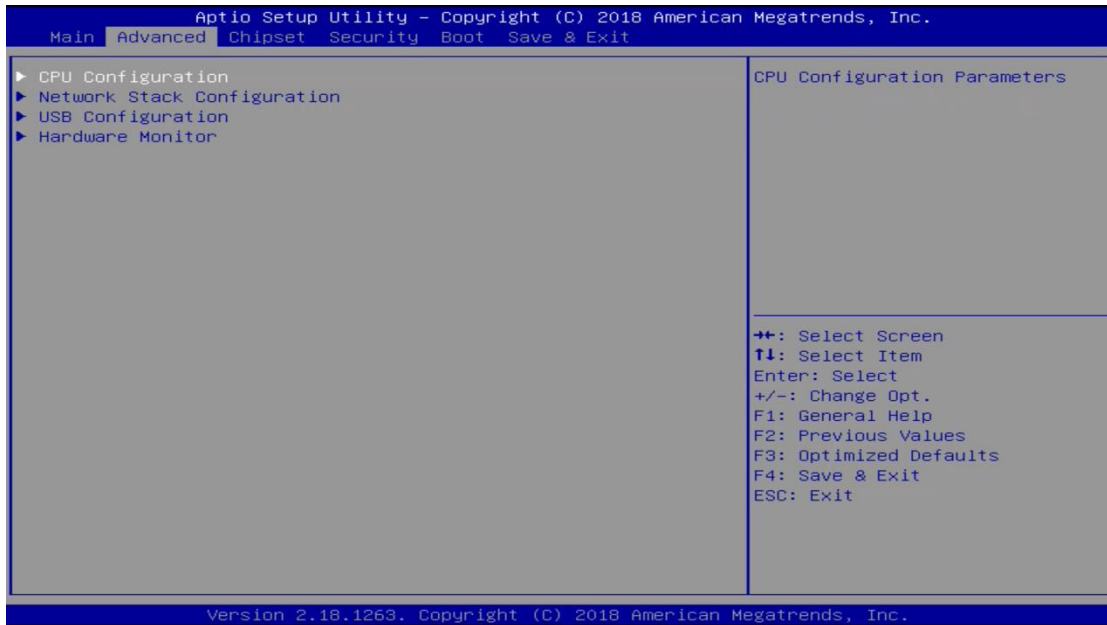
4.3.1 CPU Configuration

The items in this menu show the CPU-related information that the BIOS automatically detects.

Intel® Virtualization Tech [Enabled]

Enables or disables Intel® Virtualization Technology. Virtualization enhanced by Intel® Virtualization Technology allows a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems. Configuration options: [Enabled] [Disabled]

4.3.2 USB Configuration

The item in this menu allows you to change the USB-related features. Select an item then press **<Enter>** to display the configuration options.

🖊 The Module Version and USB Devices Enabled items show the auto-detected values. If no USB device is detected, the item shows None.

XHCI Hand-off [Enabled]

[Enabled] Workaround for OSes without XHCI hand-off support

[Disabled] Disable workaround for OSes without XHCI hand-off support

4.4 Security menu

The Security menu items allow you to change the system security settings.

```
           Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
    Main  Advanced  Chipset  Security  Boot  Save & Exit

  Password Description                               Set Administrator Password

  If ONLY the Administrator's password is set,
  then this only limits access to Setup and is
  only asked for when entering Setup.
  If ONLY the User's password is set, then this
  is a power on password and must be entered to
  boot or enter Setup. In Setup the User will
  have Administrator rights.
  The password length must be
  in the following range:
  Minimum length                    3
  Maximum length                    20
                                                   →←: Select Screen
                                                   ↑↓: Select Item
                                                   Enter: Select
  Administrator Password                           +/-: Change Opt.
  User Password                                    F1: General Help
                                                   F2: Previous Values
                                                   F3: Optimized Defaults
                                                   F4: Save & Exit
                                                   ESC: Exit

           Version 2.18.1263. Copyright (C) 2018 American Megatrends, Inc.
```

Administrator Password

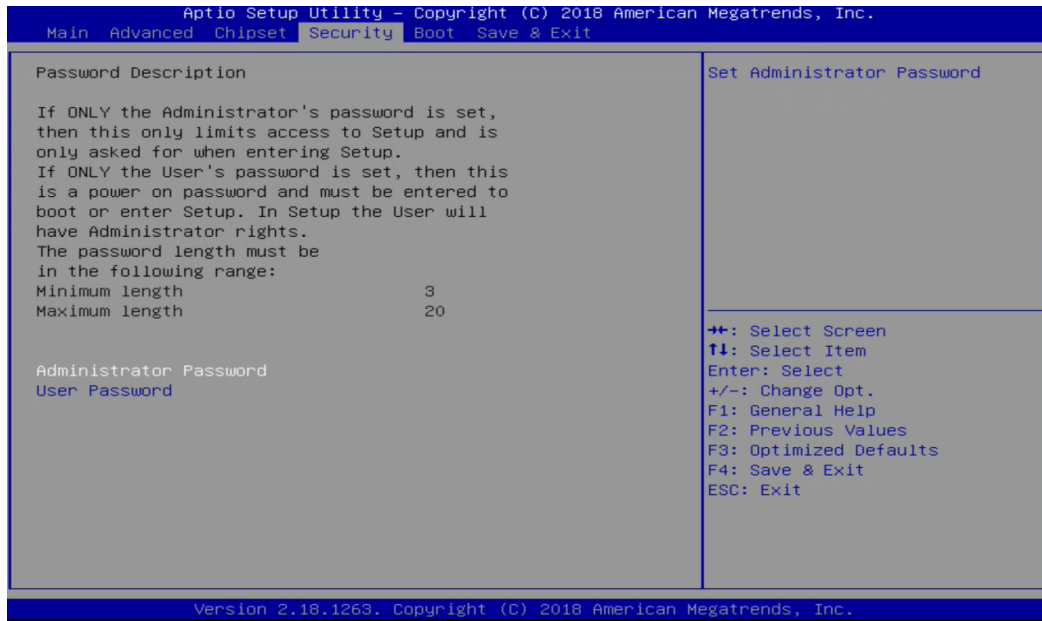If you have set an administrator password, we recommend that you enter the administrator password for accessing the system. Otherwise, you might be able to see or change only selected fields in the BIOS setup program.

To set an administrator password:

🖉 If you have forgotten your BIOS password, erase the CMOS Real Time Clock (RTC) RAM to clear the BIOS password. See section 3.4 Jumpers for information on how to erase the RTC RAM.

The Administrator or User Password items on top of the screen show the default Not Installed. After you set a password, these items show Installed.

1. Select the Administrator Password item and press <Enter>.

2. From the Create New Password box, key in a password, then press <Enter>.

3. Confirm the password when prompted.

To change an administrator password:

1. Select the Administrator Password item and press <Enter>.

2. From the Enter Current Password box, key in the current password, then press <Enter>.

3. From the Create New Password box, key in a new password, then press <Enter>.

4. Confirm the password when prompted.

To clear the administrator password, follow the same steps as in changing an administrator password, but press <Enter> when prompted to create/confirm the password. After you clear the password, the Administrator Password item on top of the screen shows **Not Installed**.

User Password

If you have set a user password, you must enter the user password for accessing the system. The User Password item on top of the screen shows the default **Not Installed**. After you set a password, this item shows **Installed**.

To set a user password:

1. Select the **User Password** item and press <Enter>.

2. From the **Create New Password** box, key in a password, then press <Enter>.

3. Confirm the password when prompted.

To change a user password:

1. Select the User Password item and press <Enter>.

2. From the **Enter Current Password** box, key in the current password, then press <Enter>.

3. From the **Create New Password** box, key in a new password, then press <Enter>.

4. Confirm the password when prompted.

To clear the user password, follow the same steps as in changing a user password, but press <Enter> when prompted to create/confirm the password. After you clear the password, the **User Password** item on top of the screen shows **Not Installed**.

4.5 Boot menu

The Boot menu items allow you to change the system boot options.

NEC Micro PC User Manual
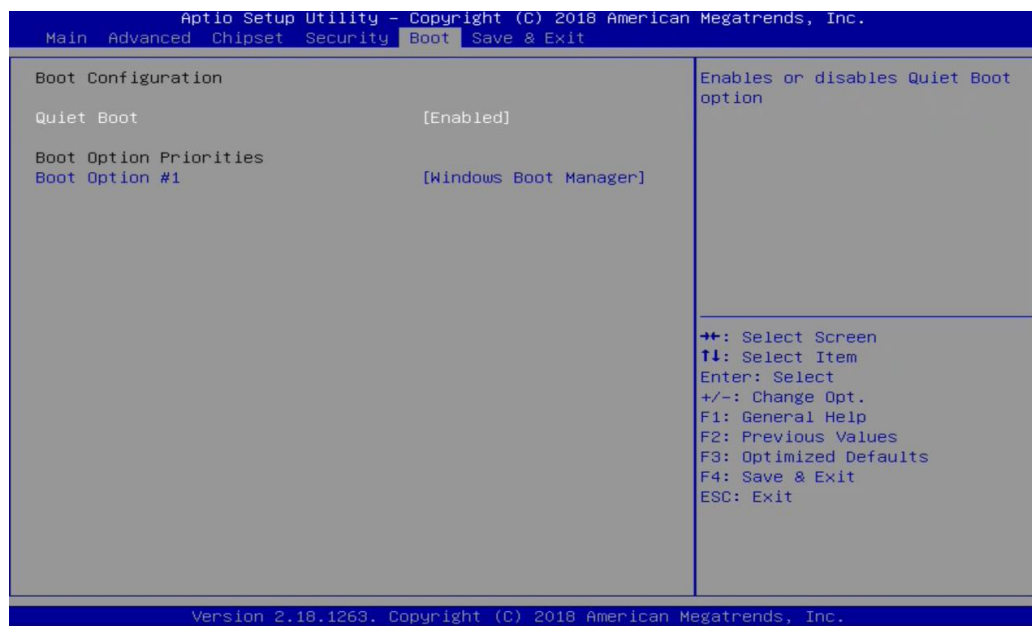
Boot Configuration

Quiet Boot [Enabled]

This item enables/disables Quiet Boot. Configuration options: [Disabled] [Enabled]

Boot Option Priorities

These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.

> To select the boot device during system startup, press <F7> during POST.
>
> To access Windows OS in Safe Mode, press <F8> after POST.

4.6 Save & Exit menu

```
            Aptio Setup Utility - Copyright (C) 2018 American Megatrends, Inc.
       Main  Advanced  Chipset  Security  Boot  Save & Exit

    Save Options                                    Reset the system after saving
                                                    the changes.
    Save Changes and Reset
    Discard Changes and Exit

    Default Options
    Restore Defaults



                                                    →←: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F3: Optimized Defaults
                                                    F4: Save & Exit
                                                    ESC: Exit



            Version 2.18.1263. Copyright (C) 2018 American Megatrends, Inc.
```
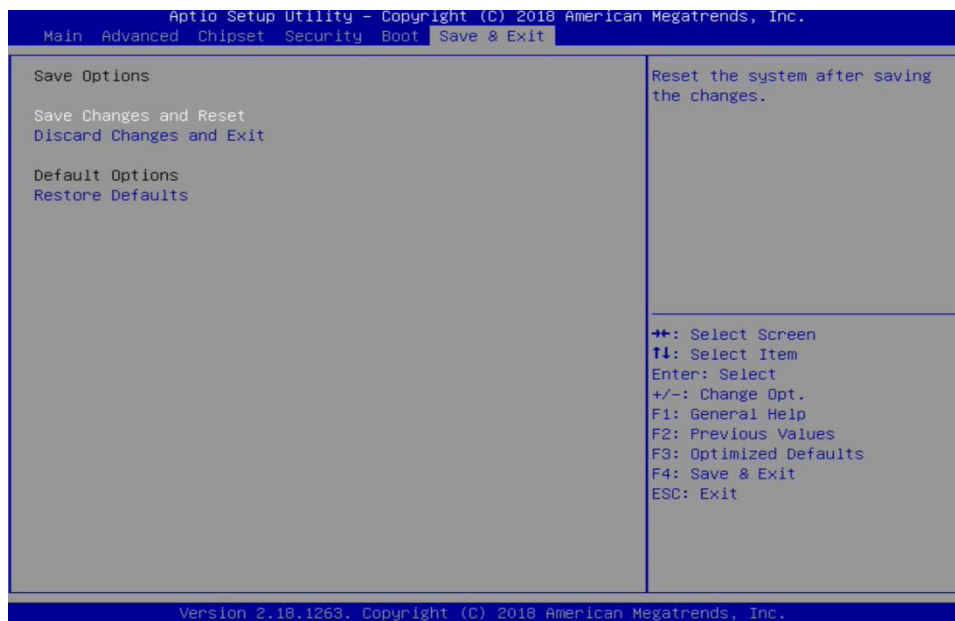
The Save & Exit menu items allow you to load the optimal default values for the BIOS items, and save or discard your changes to the BIOS items.

Save Changes and Reset

Once you are finished making your selections, choose this option from the Save & Exit menu to ensure the values you selected are saved. When you select this option or if you press <F4>, a confirmation window appears. Select Yes to save changes and reset.

Discard Changes and Reset

This option allows you to reset the system without saving your changes. When you select this option or if you press <Esc>, a confirmation window appears. Select Yes to discard changes and reset.

Restore Defaults

This option allows you to restore the default values for each of the parameters on the Setup menus. When you select this option or if you press <F3>, a confirmation window appears. Select Yes to load the default values.