NEXCOM International Co., Ltd.

Intelligent Platform & Services Business Unit

Digital Signage Platform

NDiS B866

User Manual

NEXCOM International Co., Ltd.
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Contents

PREFACE

Copyright

Disclaimer

The information in this document is subject to change without prior notice and does not represent commitment from NEXCOM International Co., Ltd. However, users may update their knowledge of any product in use by constantly checking its manual posted on our website: http://www.nexcom.com. NEXCOM shall not be liable for direct, indirect, special, incidental, or consequential damages arising out of the use of any product, nor for any infringements upon the rights of third parties, which may result from such use. Any implied warranties of merchantability or fitness for any particular purpose is also disclaimed.

Acknowledgements

NDiS B866 is a trademark of NEXCOM International Co., Ltd. All other product names mentioned herein are registered trademarks of their respective owners.

Regulatory Compliance Statements

This section provides the FCC compliance statement for Class A devices and describes how to keep the system CE compliant.

Declaration of Conformity

FCC

This equipment has been tested and verified to comply with the limits for a Class A digital device, pursuant to Part 15 of 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 instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area (domestic environment) is likely to cause harmful interference, in which case the user will be required to correct the interference (take adequate measures) at their own expense.

CE

The product(s) described in this manual complies with all applicable European Union (CE) directives if it has a CE marking. For computer systems to remain CE compliant, only CE-compliant parts may be used. Maintaining CE compliance also requires proper cable and cabling techniques.

RoHS Compliance

NEXCOM RoHS Environmental Policy and Status Update

NEXCOM is a global citizen for building the digital infrastructure. We are committed to providing green products and services, which are compliant with European Union RoHS (Restriction on Use of Hazardous Substance in Electronic Equipment) directive 2011/65/EU, to be your trusted green partner and to protect our environment.

RoHS restricts the use of Lead (Pb) < 0.1% or 1,000ppm, Mercury (Hg) < 0.1% or 1,000ppm, Cadmium (Cd) < 0.01% or 100ppm, Hexavalent Chromium (Cr6+) < 0.1% or 1,000ppm, Polybrominated biphenyls (PBB) < 0.1% or 1,000ppm, and Polybrominated diphenyl Ethers (PBDE) < 0.1% or 1,000ppm.

In order to meet the RoHS compliant directives, NEXCOM has established an engineering and manufacturing task force to implement the introduction of green products. The task force will ensure that we follow the standard NEXCOM development procedure and that all the new RoHS components and new manufacturing processes maintain the highest industry quality levels for which NEXCOM are renowned.

The model selection criteria will be based on market demand. Vendors and suppliers will ensure that all designed components will be RoHS compliant.

How to recognize NEXCOM RoHS Products?

For existing products where there are non-RoHS and RoHS versions, the suffix "(LF)" will be added to the compliant product name.

All new product models launched after January 2013 will be RoHS compliant. They will use the usual NEXCOM naming convention.

Warranty and RMA

NEXCOM Warranty Period

NEXCOM manufactures products that are new or equivalent to new in accordance with industry standard. NEXCOM warrants that products will be free from defect in material and workmanship for 2 years, beginning on the date of invoice by NEXCOM. HCP series products (Blade Server) which are manufactured by NEXCOM are covered by a three year warranty period.

NEXCOM Return Merchandise Authorization (RMA)

- Customers shall enclose the "NEXCOM RMA Service Form" with the returned packages.
- Customers must collect all the information about the problems encountered and note anything abnormal or, print out any on-screen messages, and describe the problems on the "NEXCOM RMA Service Form" for the RMA number apply process.
- Customers can send back the faulty products with or without accessories (manuals, cable, etc.) and any components from the card, such as CPU and RAM. If the components were suspected as part of the problems, please note clearly which components are included. Otherwise, NEXCOM is not responsible for the devices/parts.
- Customers are responsible for the safe packaging of defective products, making sure it is durable enough to be resistant against further damage and deterioration during transportation. In case of damages occurred during transportation, the repair is treated as "Out of Warranty."
- Any products returned by NEXCOM to other locations besides the customers' site will bear an extra charge and will be billed to the customer.

Repair Service Charges for Out-of-Warranty Products

NEXCOM will charge for out-of-warranty products in two categories, one is basic diagnostic fee and another is component (product) fee.

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System Level

- Component fee: NEXCOM will only charge for main components such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistor, capacitor.
- Items will be replaced with NEXCOM products if the original one cannot be repaired. Ex: motherboard, power supply, etc.
- Replace with 3rd party products if needed.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Board Level

- Component fee: NEXCOM will only charge for main components, such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistors, capacitors.
- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Warnings

Read and adhere to all warnings, cautions, and notices in this guide and the documentation supplied with the chassis, power supply, and accessory modules. If the instructions for the chassis and power supply are inconsistent with these instructions or the instructions for accessory modules, contact the supplier to find out how you can ensure that your computer meets safety and regulatory requirements.

Cautions

Electrostatic discharge (ESD) can damage system components. Do the described procedures only at an ESD workstation. If no such station is available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the computer chassis.

Safety Information

Before installing and using the device, note the following precautions:

- Read all instructions carefully.
- Do not place the unit on an unstable surface, cart, or stand.
- Follow all warnings and cautions in this manual.
- When replacing parts, ensure that your service technician uses parts specified by the manufacturer.
- Avoid using the system near water, in direct sunlight, or near a heating device.
- The load of the system unit does not solely rely for support from the rackmounts located on the sides. Firm support from the bottom is highly necessary in order to provide balance stability.
- The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Installation Recommendations

Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.

Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:

- A Philips screwdriver
- A flat-tipped screwdriver
- A grounding strap
- An anti-static pad

Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nose pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.

Safety Precautions

1. Read these safety instructions carefully.

2. Keep this User Manual for later reference.

3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.

4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.

5. Keep this equipment away from humidity.

6. Put this equipment on a stable surface during installation. Dropping it or letting it fall may cause damage.

7. The openings on the enclosure are for air convection to protect the equipment from overheating. DO NOT COVER THE OPENINGS.

8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.

9. Place the power cord in a way so that people will not step on it. Do not place anything on top of the power cord. Use a power cord that has been approved for use with the product and that it matches the voltage and current marked on the product's electrical range label. The voltage and current rating of the cord must be greater than the voltage and current rating marked on the product.

10. All cautions and warnings on the equipment should be noted.

11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.

12. Never pour any liquid into an opening. This may cause fire or electrical shock.

13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.

14. If one of the following situations arises, get the equipment checked by service personnel:
    a. The power cord or plug is damaged.
    b. Liquid has penetrated into the equipment.
    c. The equipment has been exposed to moisture.
    d. The equipment does not work well, or you cannot get it to work according to the user's manual.
    e. The equipment has been dropped and damaged.
    f. The equipment has obvious signs of breakage.

15. Do not place heavy objects on the equipment.

16. The unit uses a three-wire ground cable which is equipped with a third pin to ground the unit and prevent electric shock. Do not defeat the purpose of this pin. If your outlet does not support this kind of plug, contact your electrician to replace your obsolete outlet.

17. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER. DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

Technical Support and Assistance

1. For the most updated information of NEXCOM products, visit NEXCOM's website at www.nexcom.com.

2. For technical issues that require contacting our technical support team or sales representative, please have the following information ready before calling:
   - Product name and serial number
   - Detailed information of the peripheral devices
   - Detailed information of the installed software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wordings of the error messages

Warning!

1. Handling the unit: carry the unit with both hands and handle it with care.

2. Maintenance: to keep the unit clean, use only approved cleaning products or clean with a dry cloth.

Conventions Used in this Manual

Warning:
Information about certain situations, which if not observed, can cause personal injury. This will prevent injury to yourself when performing a task.

Caution:
Information to avoid damaging components or losing data.

Note:
Provides additional information to complete a task easily.

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Package Contents

Before continuing, verify that the NDiS B866 package that you received is complete. Your package should have all the items listed in the following table.

Item	Name	Qty
1	NDiS B866	1
2	Driver DVD	1

NDiS B866

Driver DVD

Ordering Information

The following information below provides ordering information for NDiS B866.

- **Barebone**

NDiS B866 (P/N: 10W00B86600X0)
7th Generation Intel® Core™ Processor powerful signage player

- **Optional**

Power Cord
  - US/EU/JP connector types

Power Cord

Chapter 1: Product Introduction

Overview

NDiS B866 is specifically designed to address the need for application to present high quality contents on video wall, central control room, and multi-display applications. NDiS B866 provides 6 independent HDMI and 6 x USB 3.0 and dual GbE Ethernet with optional WLAN. Powered by the 6th generation Intel® Core™ processor and discrete AMD E8870 GPU, NDiS B866 can smoothly playback multiple 4K video clips. NDiS B866 is an advanced media player for any applications to demonstrate high quality and high impact contents over multiple displays.

Key Features

- 6th generation Intel® Core™ processor
- AMD EMBEDDED RADEON™ E8870 GPU
- 6 HDMI Outputs (4K2K resolution support)
- Compact 1U chassis design
- Removable dual HDD tray supporting RAID 0, 1

Hardware Specifications

CPU Support

- 6th generation Intel® Core™ LGA socket type processor (up to 65W)

Chipset

- Intel® PCH Q170

Graphics

- AMD EMBEDDED RADEON™ E8870 GPU

Main Memory

- 4x 260-pin SO-DIMM sockets, support DDR4 1866/2133 MHz non-ECC, un-buffered memory up to 64GB

I/O Interface-Front

- 1x Power Switch with LED (Blue)
- 1x HDD LED (Red)/Power LED (Green)
- 2x USB 3.0
- 2x DB9 for RS-232
- 1x HDMI input port (Optional)
- 1x Reset onboard push button
- 6x 2 HDMI plug status LED (Green: Plugged, Red: Unplugged)

I/O Interface-Rear

- 1x Line-out
- 1x Mic-in
- 1x S/PDIF
- 4x USB 3.0
- 2x RJ45 with LEDs 10/100/1000Mbps Ethernet
- 6x HDMI 1.4 (six 3840 x 2160 @ 30Hz in clone/ extended desktop mode)
- 1x AC power inlet
- 3x Antenna holes for Wi-Fi or TV tuner

Storage

- 2x SATA 2.5”
- 2x NGFF (M key), support 2242, 2280

Dimensions

- 428mm (W) x 344mm (D) x 44mm (H)

Power Supply

- 1 x Internal 250W power supply with active PFC (Power Factor Correction), Input: 115VAC~230VAC

Expansion

- 1x Mini-PCIe slot (full size)
- 1x NGFF (E key), supports 1630/2230 for optional WLAN
- 1x SIM Slot

Environment

- Operating temperature: 0°C to 40°C
- Storage temperature: -40°C to 80°C
- Humidity: 10 to 95% (non-condensing)

Certifications

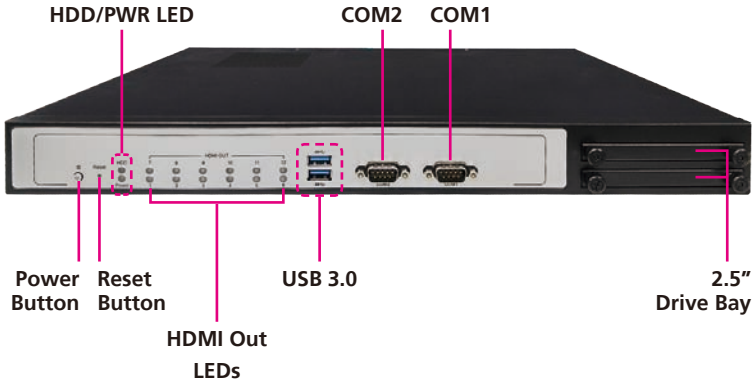
- CE approval
- FCC Class A

Operating System

- Windows 10/Linux

Knowing Your NDiS B866

Front Panel



Power Button

Power switch to power on/off the NDiS B866 system.

Reset Button

Push button for system reset.

HDD/PWR LED

Displays the HDD activity and power status of the system.

HDMI Out LEDs

Displays the HDMI plug status of the HDMI outputs.

LED Status	Description
Green	HDMI connection plugged
Red	HDMI connection unplugged

USB 3.0 Ports

Used to connect USB 3.0/2.0 devices.

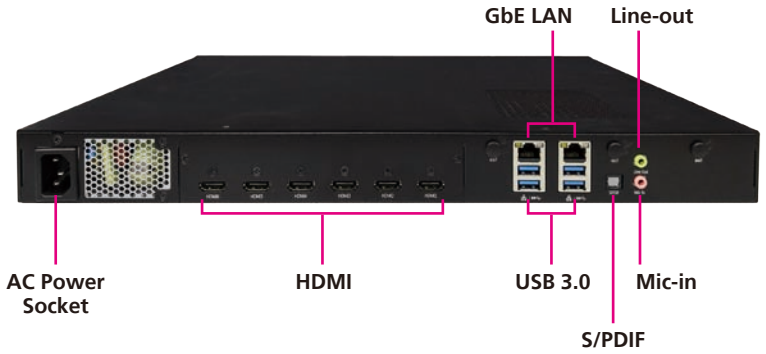
COM1 and COM2 Port

The COM ports support RS232 compatible serial devices.

2.5" Drive Bay

Used to install two 2.5" SATA storage drives.

Rear Panel



AC Power Socket (115V~230V AC Input)

Plug an AC power cord here before turning on the system.

HDMI 1.4 Ports (HDMI1 to HDMI6)

Used to connect HDMI interface monitors.

GbE LAN Ports (LAN1 and LAN2)

Used to connect the system to a local area network.

USB 3.0 Ports

Used to connect USB 3.0/2.0 devices.

S/PDIF

Used to connect a digital audio device.

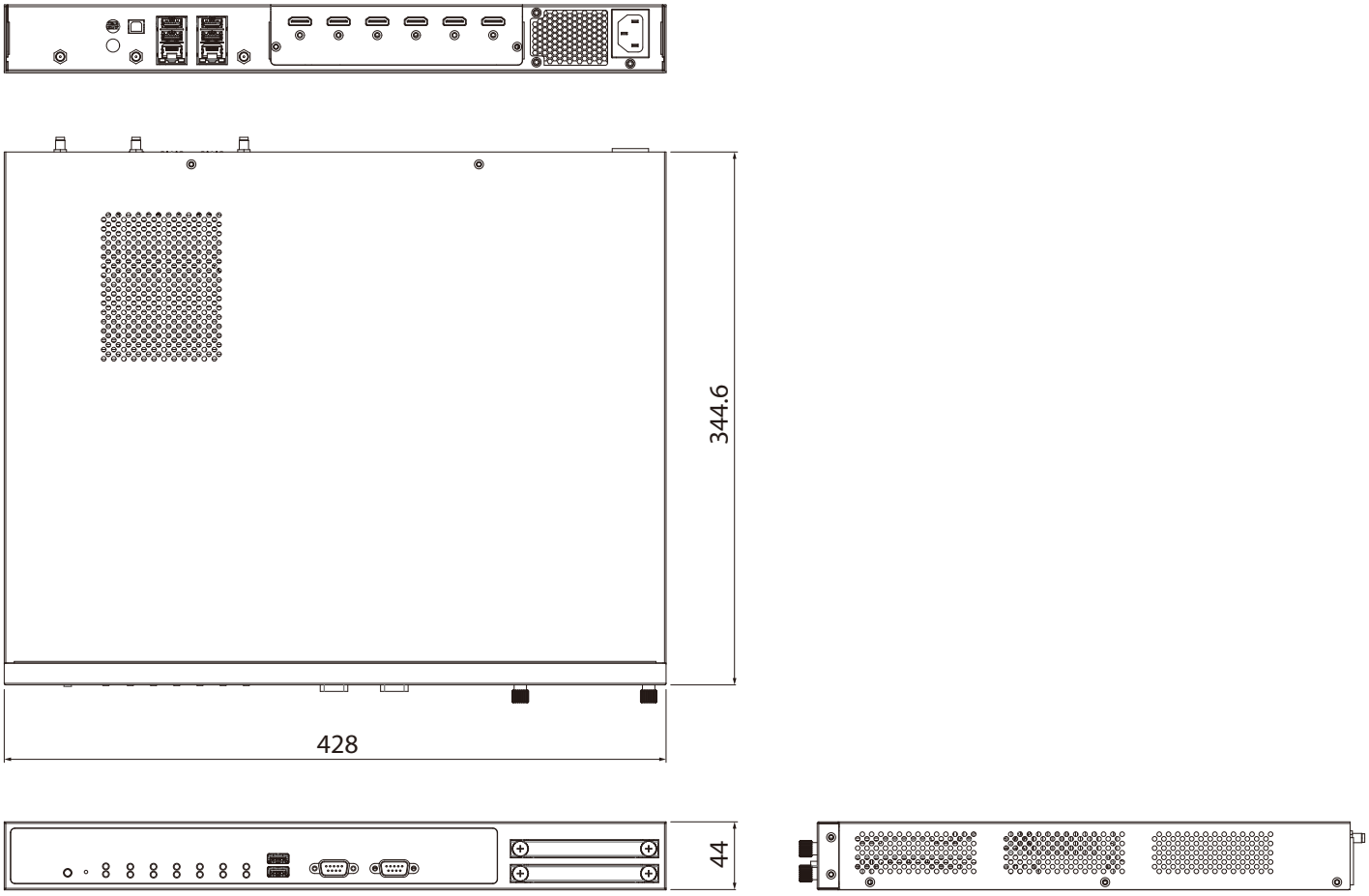
Line-out

Used to connect a headphone or a speaker.

Mic-in

Used to connect an external microphone.

Mechanical Dimensions



Chapter 2: Jumpers and Connectors

This chapter lists the locations of the jumpers and connectors for NDiS B866.

Before You Begin

- Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.
- Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:
  - A Philips screwdriver
  - A flat-tipped screwdriver
  - A set of jewelers screwdrivers
  - A grounding strap
  - An anti-static pad
- Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nosed pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.
- Before working on internal components, make sure that the power is off. Ground yourself before touching any internal components, by touching a metal object. Static electricity can damage many of the electronic components. Humid environments tend to have less static electricity than dry environments. A grounding strap is warranted whenever danger of static electricity exists.

Precautions

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be extremely dangerous.

Follow the guidelines below to avoid damage to your computer or yourself:

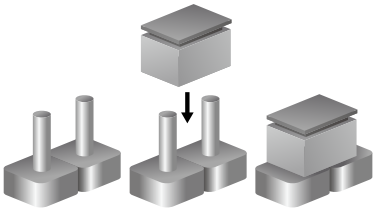
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Don't flex or stress the circuit board.
- Leave all components inside the static-proof packaging that they shipped with until they are ready for installation.
- Use correct screws and do not over tighten screws.

Jumper Settings

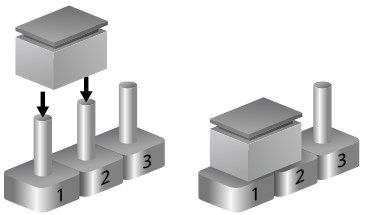
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just one pin, the jumper is open.

Refer to the illustrations below for examples of what the 2-pin and 3-pin jumpers look like when they are short (on) and open (off).

Two-Pin Jumpers: Open (Left) and Short (Right)

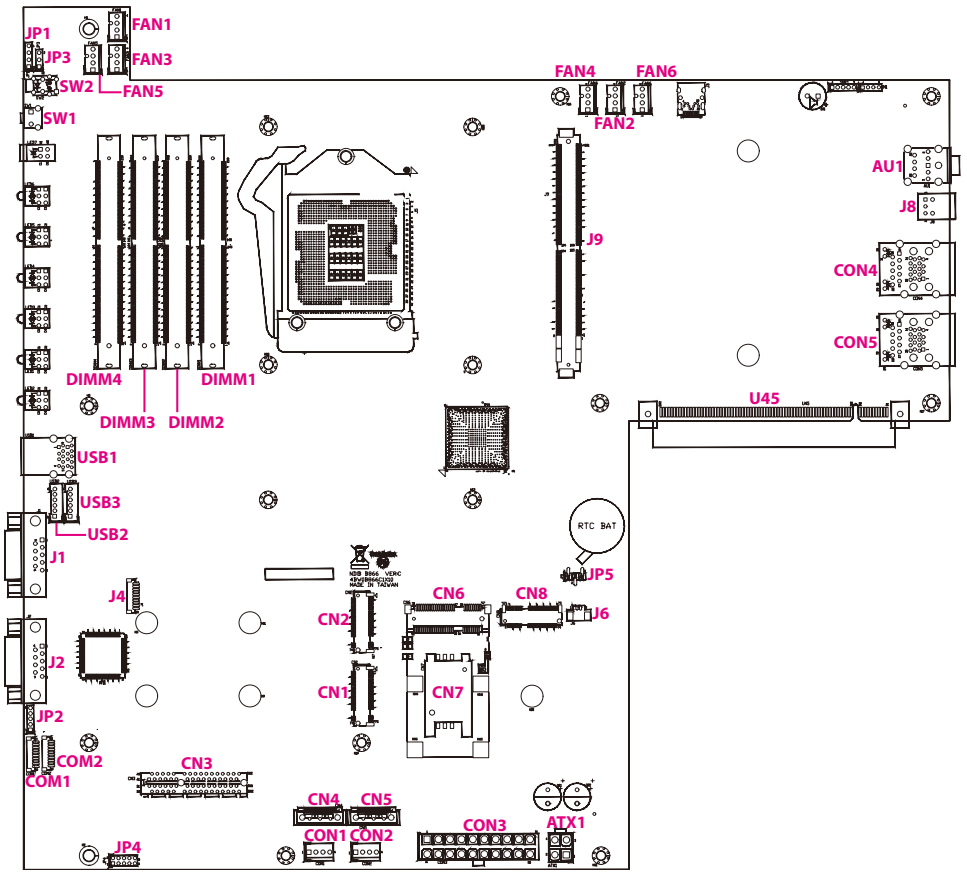


Three-Pin Jumpers: Pins 1 and 2 are Short

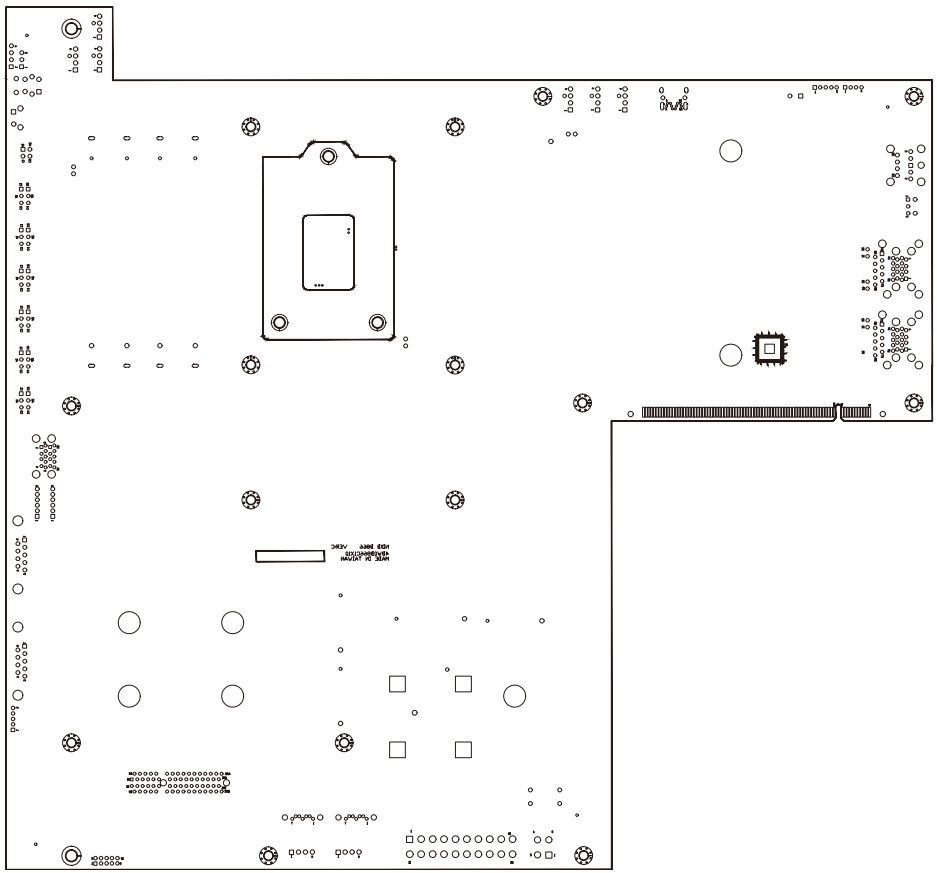


Location of the Jumpers and Connectors

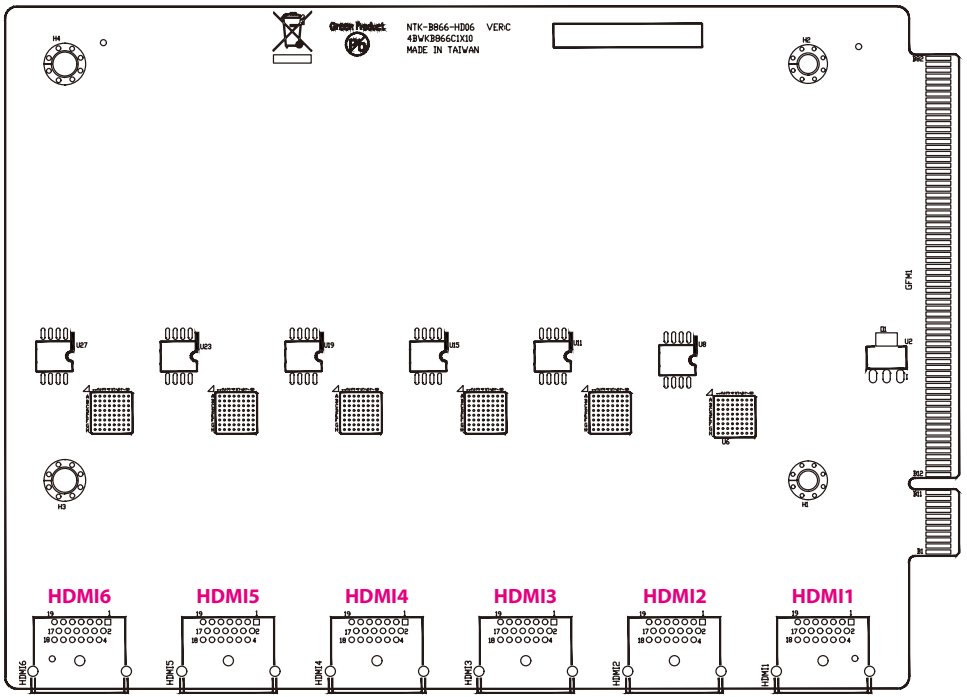
Motherboard Top View



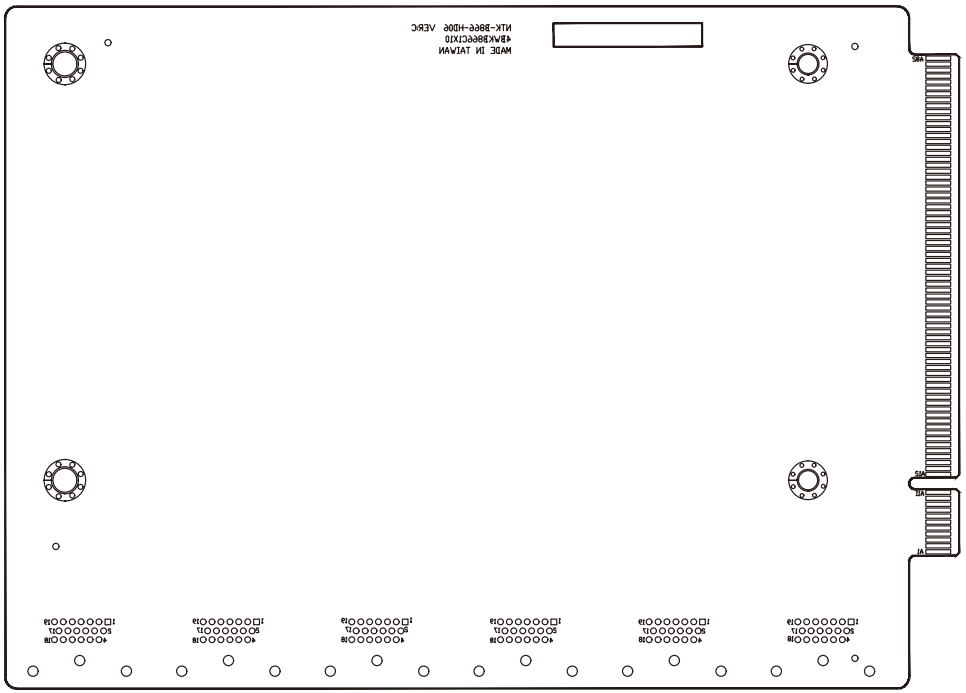
Motherboard Bottom View



HDMI Top View



HDMI Bottom View



Connector/Button Table

Connector	Description
SW1	Reset Button
SW2	Power Button
USB1	USB 3.0 Type A x 2
J1	COM Port Connector 1
J2	COM Port Connector 2
AU1	Mic-in & Line-out jack
J8	S/PDIF
CON4	USB 3.0 Type A x 2 + RJ45 x 1
CON5	USB 3.0 Type A x 2 + RJ45 x 1
J5	LGA1151 CPU Socket
DIMM1-4	DDR4 SO-DIMM Slot 1-4
HDMI1-6	HDMI Out 1-6

Connector	Description
J9	MXM Connector
U45	HDMI Daughter Board Connector
CN3	PCIe x4
CN1	M.2 M Key 2280
CN2	M.2 M Key 2242
CN7	SIM Card Slot
CN6	Mini PCIe Slot (Full Size)
CN8	M.2 E Key 1630 / 2230
CN4	SATA 3.0
CN5	SATA 3.0

Chapter 3: System Setup

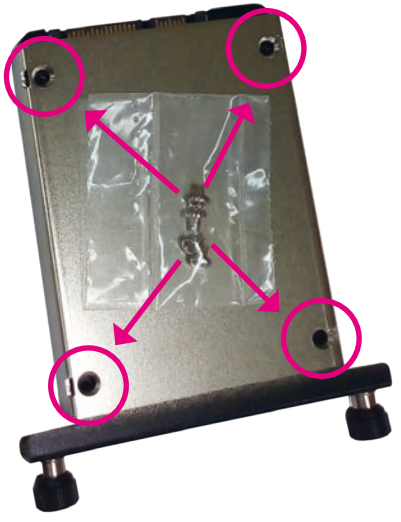
Installing a SATA HDD

Make sure the unit's power is off and disconnected from the power sources to prevent electric shock or system damage.

1. Loosen the thumb screws on the HDD bays.

2. Pull the HDD bays out.

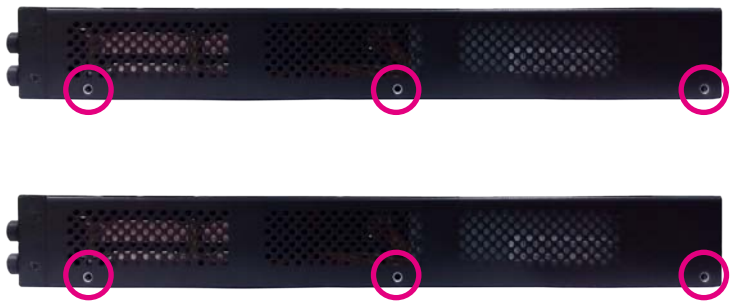
3. Insert the storage drive into the bay and apply 4 screws to the back side of the HDD bay.



4. Insert the HDD bay back to its original location and tighten the thumb screws.

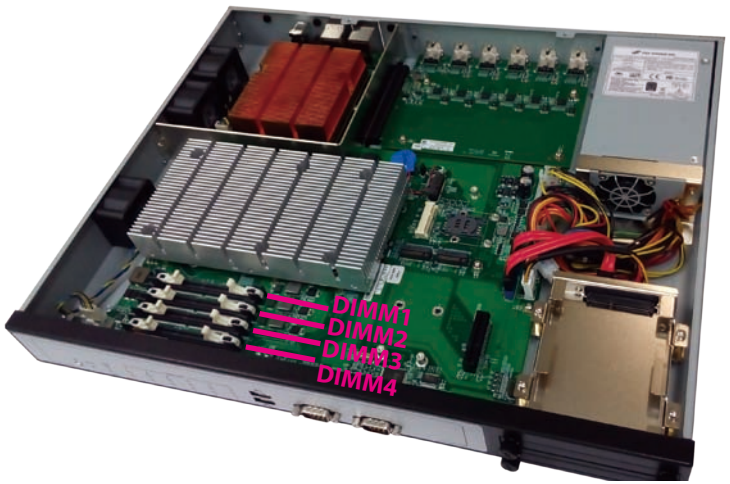
Installing a SO-DIMM Memory Module

1. Remove the eight screws around the chassis to open the top cover of NDiS B866.



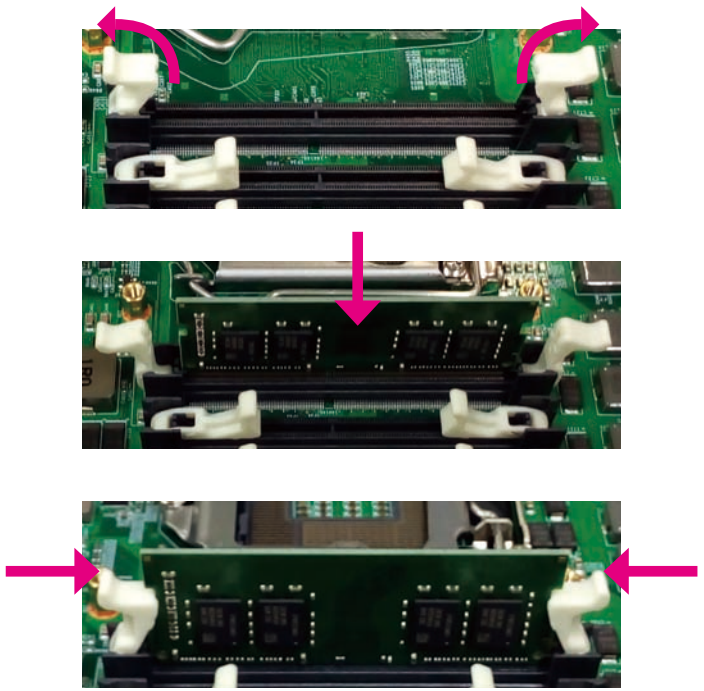
Screws on the sides

2. Locate the SO-DIMM memory sockets.



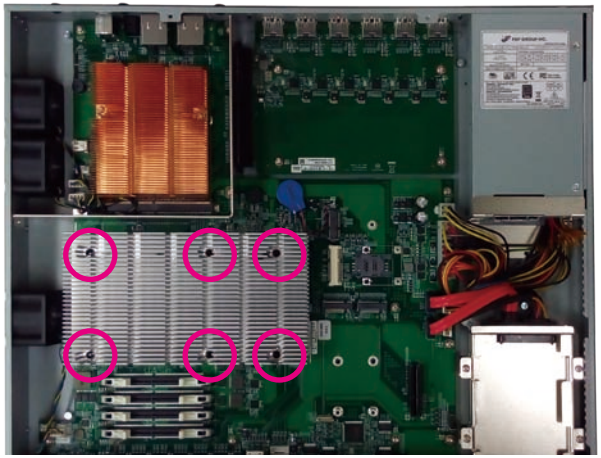
When installing memory modules, please install them into the DIMM slots in the following order: DIMM4, DIMM3, DIMM2 and DIMM1.

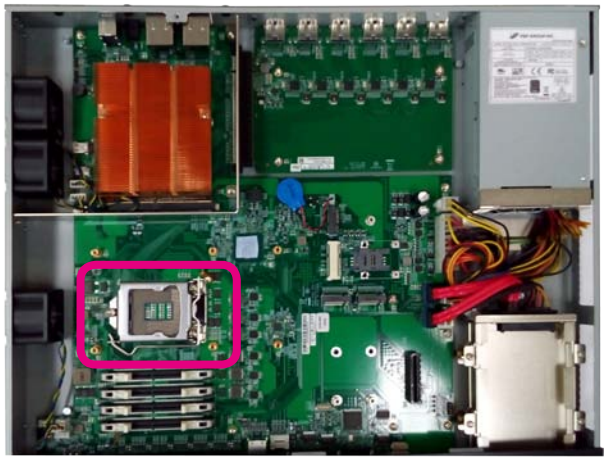
3. Push the ejector tabs which are at the ends of the socket outward. Then push the module down until the ejector tabs on both sides of the socket lock into position. You will hear a distinctive "click" sound, indicating the module is correctly locked into position.



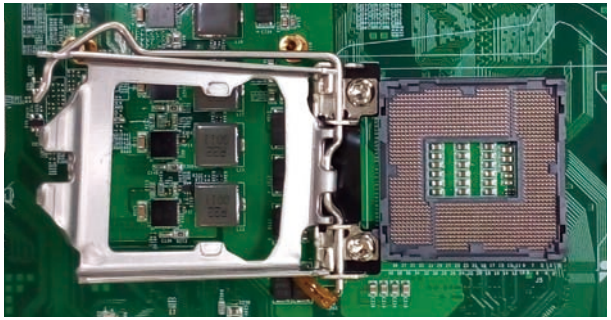
Installing the CPU (Socket Type)

1. Loosen all the six screws to remove the heat sink and access the CPU socket.

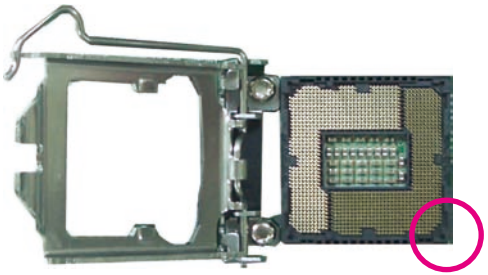




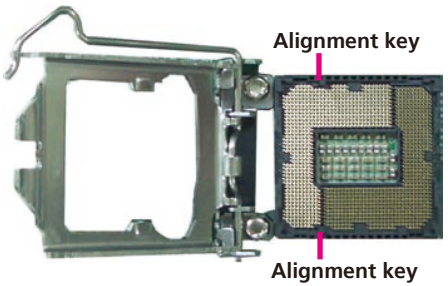
2. Unlock the socket by pushing the load lever down, moving it sideways until it is released from the retention tab; then lift the load lever up.



3. Insert the CPU into the socket. The triangular edge on the CPU must align with the corner of the CPU socket shown on the photo.



The CPU's notch will at the same time fit into the socket's alignment key.

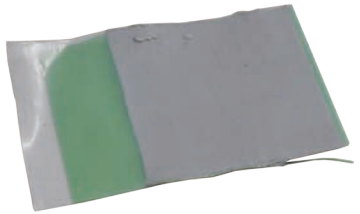


- Handle the CPU by its edges and avoid touching the pins.
- The CPU will fit in only one orientation and can easily be inserted without exerting any force.

4. Close the load plate and then hook the load lever under the retention tab.

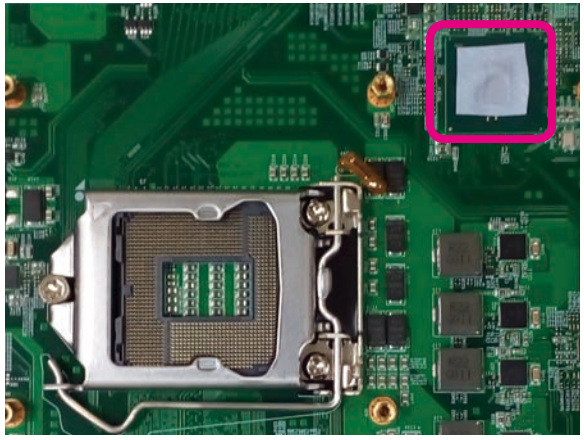
Do not force the CPU into the socket. Forcing the CPU into the socket may bend the pins and damage the CPU.

5. Remove the adhesive film on the thermal pad and place it onto the CPU.

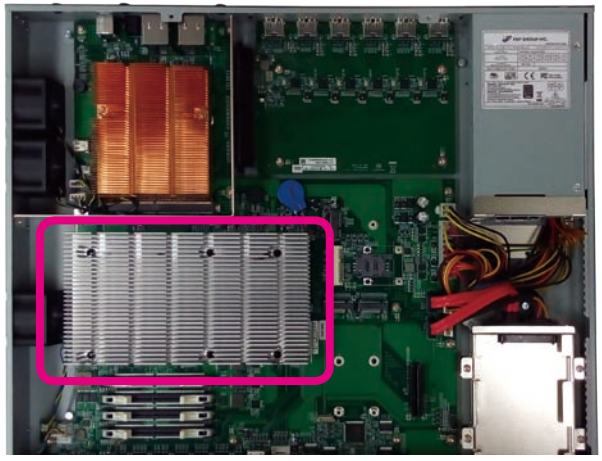


Please install the thermal pad and make sure the adhesive film on the thermal pad is removed before placing it on the heat sink.

6. Remove the adhesive film on the thermal pad and place it onto the Intel chipset.



7. Put the heat sink back to its original location and apply all the six screws to secure it in place.



Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for NDiS B866. The BIOS screens provided in this chapter are for reference only and may change if the BIOS is updated in the future.

To check for the latest updates and revisions, visit the NEXCOM website at www.nexcom.com.tw.

About BIOS Setup

The BIOS (Basic Input and Output System) Setup program is a menu driven utility that enables you to make changes to the system configuration and tailor your system to suit your individual work needs. It is a ROM-based configuration utility that displays the system's configuration status and provides you with a tool to set system parameters.

These parameters are stored in non-volatile battery-backed-up CMOS RAM that saves this information even when the power is turned off. When the system is turned back on, the system is configured with the values found in CMOS.

With easy-to-use pull down menus, you can configure such items as:

- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

The settings made in the setup program affect how the computer performs. It is important, therefore, first to try to understand all the setup options, and second, to make settings appropriate for the way you use the computer.

When to Configure the BIOS

- This program should be executed under the following conditions:
- When changing the system configuration
- When a configuration error is detected by the system and you are prompted to make changes to the setup program
- When resetting the system clock
- When redefining the communication ports to prevent any conflicts
- When making changes to the Power Management configuration
- When changing the password or making other changes to the security setup

Normally, CMOS setup is needed when the system hardware is not consistent with the information contained in the CMOS RAM, whenever the CMOS RAM has lost power, or the system features need to be changed.

Default Configuration

Most of the configuration settings are either predefined according to the Load Optimal Defaults settings which are stored in the BIOS or are automatically detected and configured without requiring any actions. There are a few settings that you may need to change depending on your system configuration.

Entering Setup

When the system is powered on, the BIOS will enter the Power-On Self Test (POST) routines. These routines perform various diagnostic checks; if an error is encountered, the error will be reported in one of two different ways:

- If the error occurs before the display device is initialized, a series of beeps will be transmitted.
- If the error occurs after the display device is initialized, the screen will display the error message.

Powering on the computer and immediately pressing <Del> allows you to enter Setup.

Press the 

key to enter Setup:

Legends

Key	Function
	Moves the highlight left or right to select a menu.
	Moves the highlight up or down between sub-menus or fields.
	Exits the BIOS Setup Utility.
	Scrolls forward through the values or options of the highlighted field.
	Scrolls backward through the values or options of the highlighted field.
	Selects a field.
	Displays General Help.
	Load previous values.
	Load optimized default values.
	Saves and exits the Setup program.
	Press <Enter> to enter the highlighted sub-menu

Scroll Bar

When a scroll bar appears to the right of the setup screen, it indicates that there are more available fields not shown on the screen. Use the up and down arrow keys to scroll through all the available fields.

Submenu

When "▶" appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press 

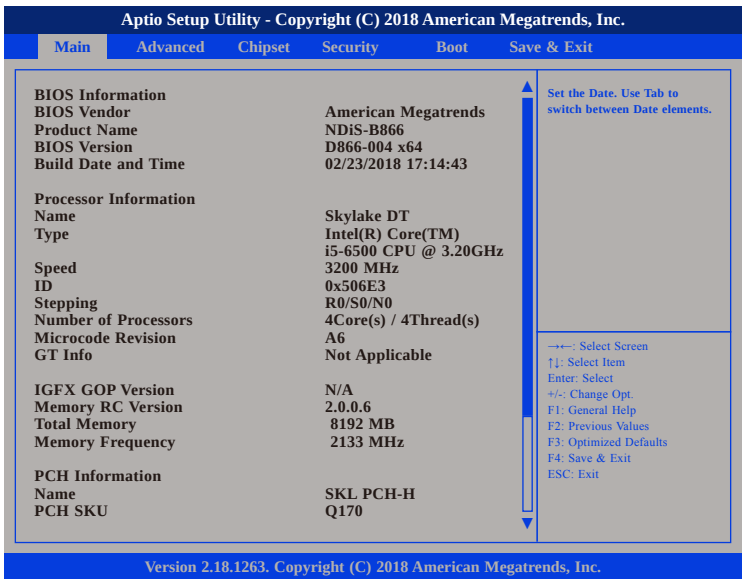
.

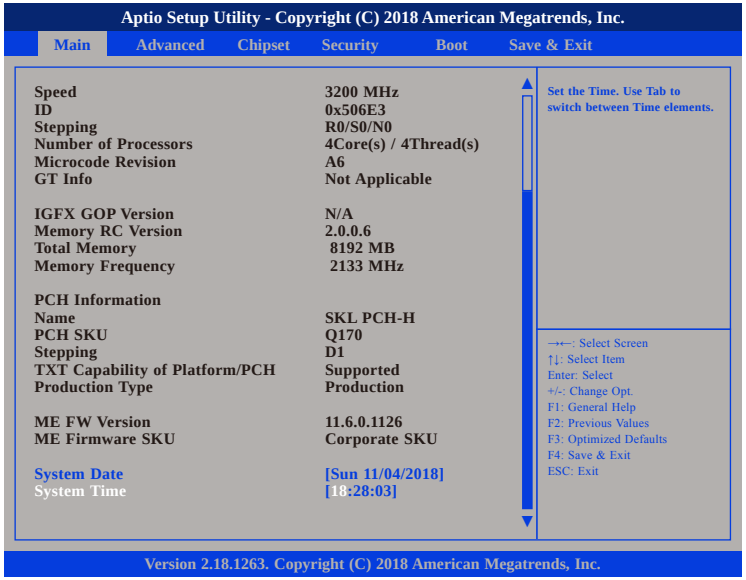
BIOS Setup Utility

Once you enter the AMI BIOS Setup Utility, the Main Menu will appear on the screen. The main menu allows you to select from several setup functions and one exit. Use arrow keys to select among the items and press Enter to accept or enter the submenu.

Main

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.





System Date

The date format is <day>, <month>, <date>, <year>. Day displays a day, from Monday to Sunday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1999 to 2099.

System Time

The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

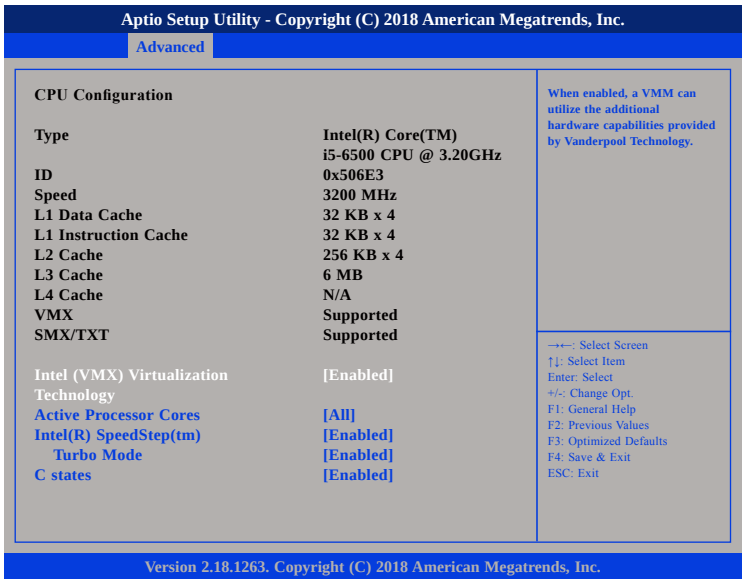
Advanced

The Advanced menu allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.

Setting incorrect field values may cause the system to malfunction.

CPU Configuration

This section is used to view CPU status and configure CPU parameters.



Intel® (VMX) Virtualization Technology

When this field is set to Enabled, the VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

Active Processor Cores

Select the number of cores to enable in each processor package.

Intel® SpeedStep™

Enables or disables Intel SpeedStep.

Turbo Mode

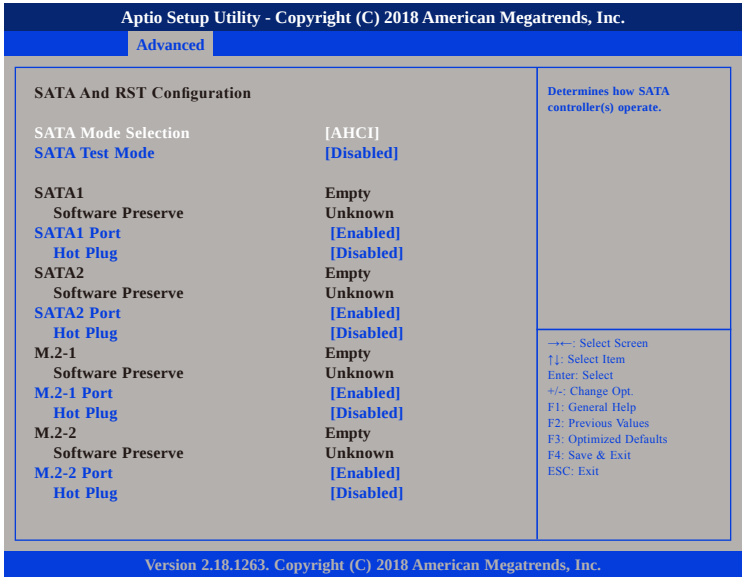
Enables or disables turbo mode.

C states

Enables or disables CPU C states.

SATA and RST Configuration

This section is used to configure the SATA device option settings.



SATA Mode Selection

Configures the SATA as AHCI mode.

AHCI This option configures the Serial ATA drives to use AHCI (Advanced Host Controller Interface). AHCI allows the storage driver to enable the advanced Serial ATA features which will increase storage performance.

SATA Test Mode

Enables or disables SATA test mode.

SATA1 Port and SATA2 Port

Enables or disables SATA port 1 and port 2.

SATA1 and SATA2 Hot Plug

Enables or disables hot plugging feature on SATA port 1 and port 2.

M.2-1 Port and M.2-2 Port

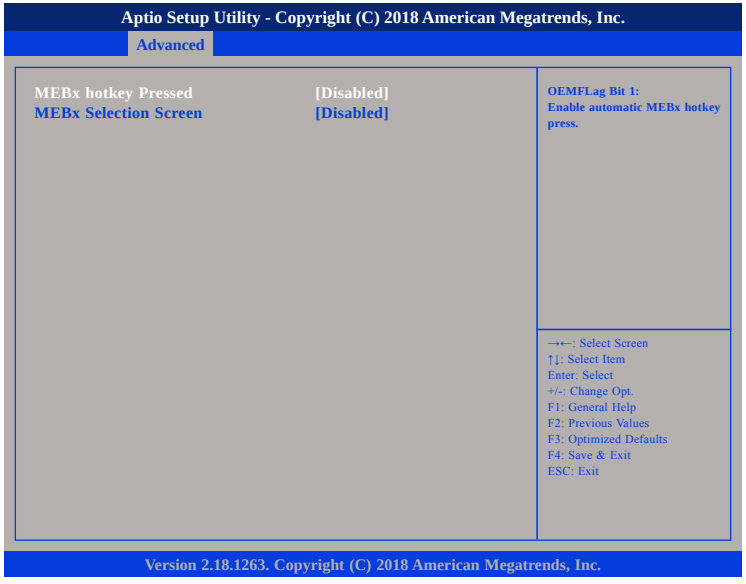
Enables or disables M.2 slot 1 and M.2 slot 2.

M.2-1 and M.2-2 Hot Plug

Enables or disables hot plugging feature on M.2 slot 1 and slot 2.

AMT Configuration

This section is used to configure AMT settings.



MEBx hotkey Pressed

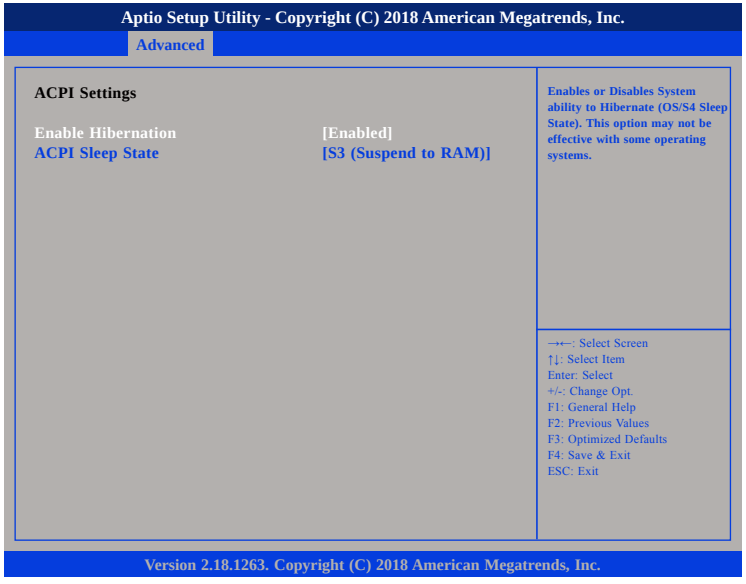
Enables or disables automatic MEBx hotkey press.

MEBx Selection Screen

Enables or disables MEBx selection screen.

ACPI Settings

This section is used to configure ACPI settings.



Enable Hibernation

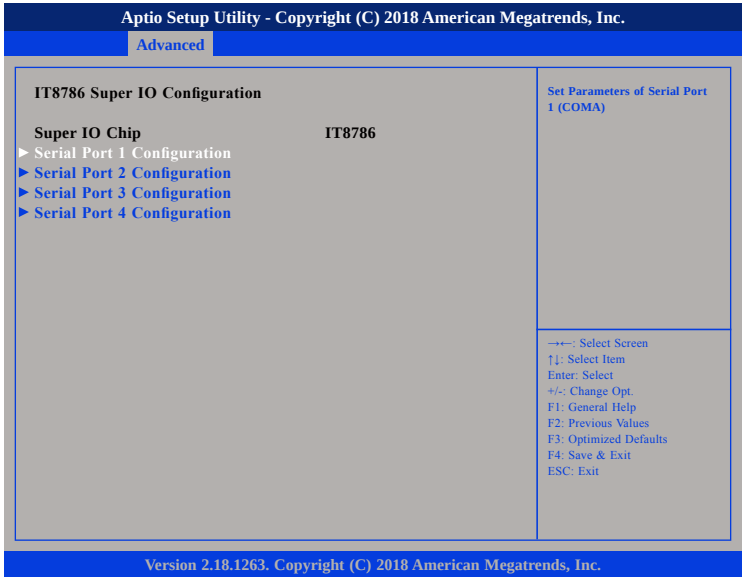
Enables or disables system ability to hibernate (OS/S4 Sleep State). This option may not be effective with some operating systems.

ACPI Sleep State

Select the highest ACPI sleep state the system will enter when the suspend button is pressed. The options are Suspend Disabled and S3 (Suspend to RAM).

IT8786 Super IO Configuration

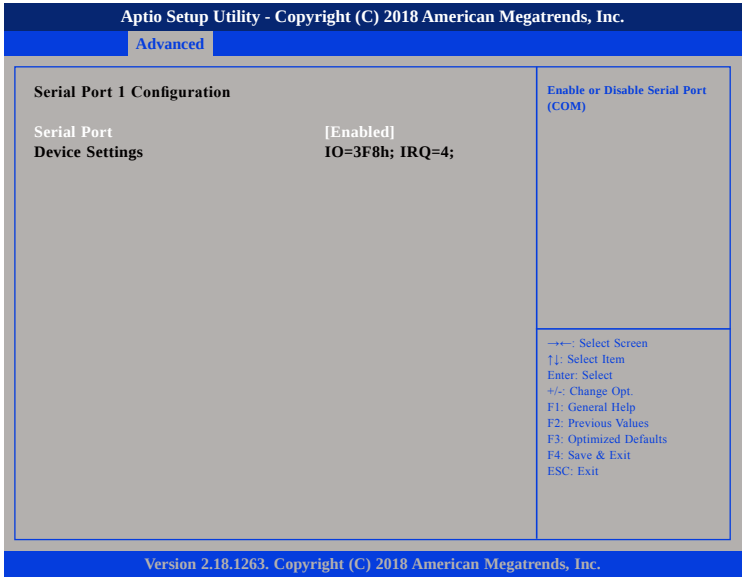
This section is used to configure serial ports 1 to 4.



Super IO Chip

Displays the Super I/O chip used on the board.

Serial Port 1 Configuration



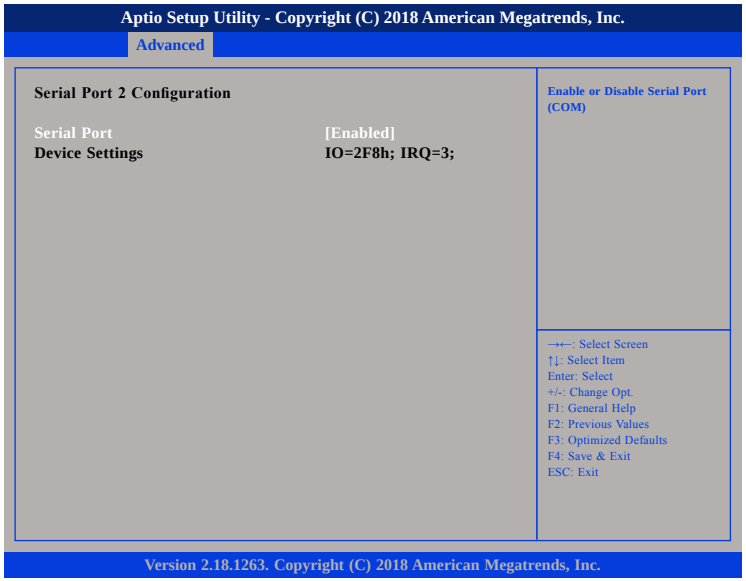
Serial Port

Enables or disables the serial port.

Device Settings

Displays the IO address and IRQ of serial port 1.

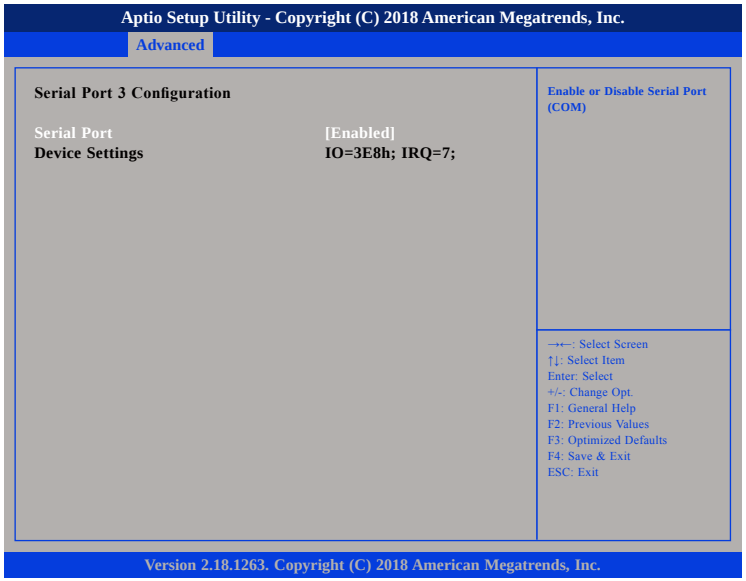
Serial Port 2 Configuration



Serial Port
Enables or disables the serial port.

Device Settings
Displays the IO address and IRQ of serial port 2.

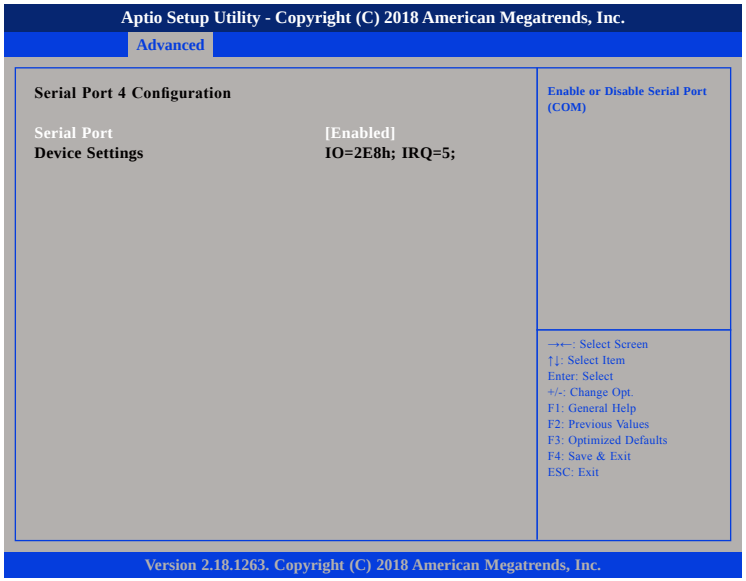
Serial Port 3 Configuration



Serial Port
Enables or disables the serial port.

Device Settings
Displays the IO address and IRQ of serial port 3.

Serial Port 4 Configuration



Serial Port

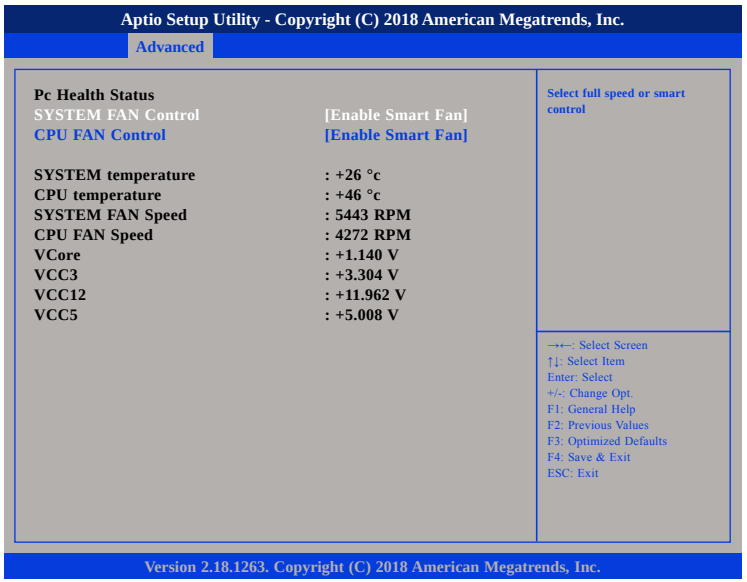
Enables or disables the serial port.

Device Settings

Displays the IO address and IRQ of serial port 4.

Hardware Monitor

This section is used to monitor hardware status such as temperature, fan speed and voltages.



SYSTEM FAN Control

Configures the fan mode for system fan, the options are Full Speed and Enable Smart Fan.

CPU FAN Control

Configures the fan mode for CPU, the options are Full Speed and Enable Smart Fan.

SYSTEM temperature

Detects and displays the internal temperature of the system.

CPU temperature
Detects and displays the current CPU temperature.

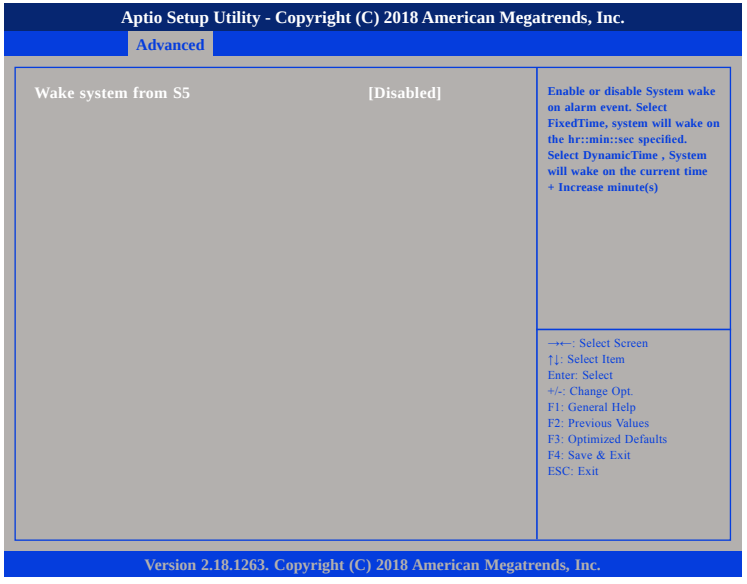
SYSTEM FAN Speed
Detects and displays the current system fan speed.

CPU FAN Speed
Detects and displays the current CPU fan speed.

VCore to VCC5
Detects and displays the output voltages.

S5 RTC Wake Settings

This section is used to configure system to wake from S5 using RTC alarm.



Wake System from S5
Enables or disables system wake on alarm event. When FixedTime is selected, system will wake on the hr::min::sec specified. When DynamicTime is selected, system will wake on the current time + Increase minute(s).

CSM Configuration

This section is used to configure the compatibility support module features.

CSM Support

Enables or disables Compatibility Support Module (CSM).

Boot Option Filter

This option filters which devices system can boot to.

Network

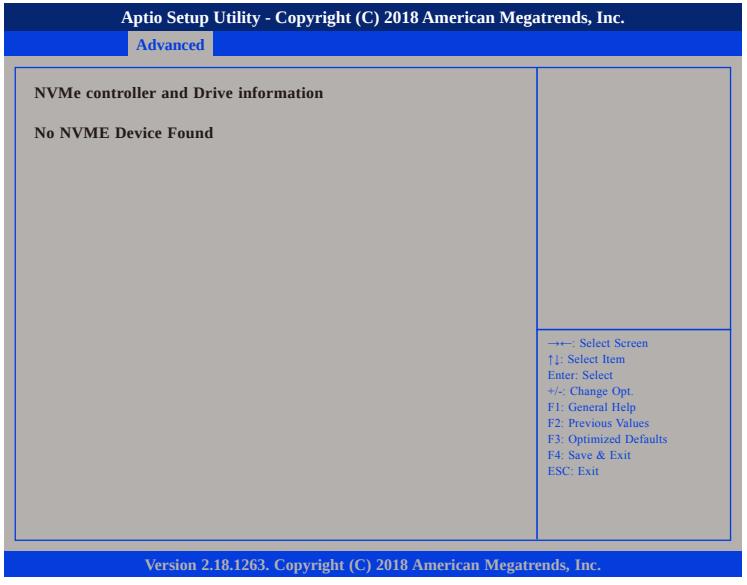
Enables or disables the boot option for legacy network devices.

Storage

Enables or disables the boot option for legacy storage devices.

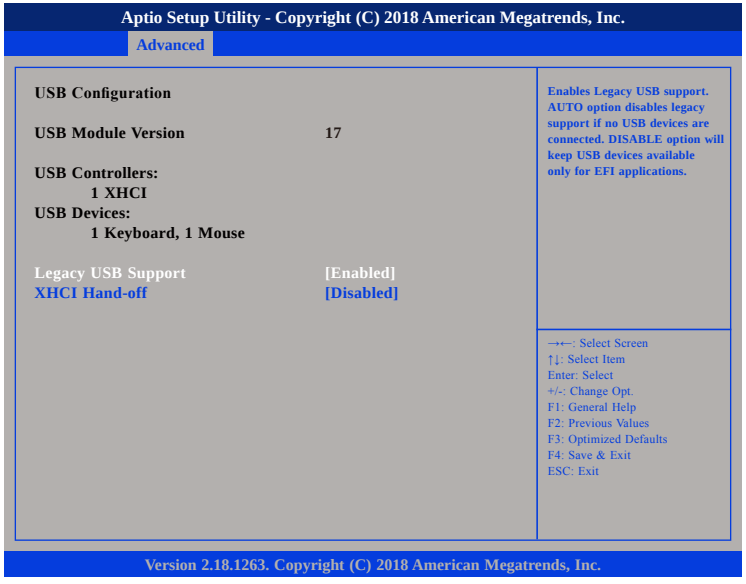
NVMe Configuration

This section is used to display information on the NVMe devices installed.



USB Configuration

This section is used to configure USB parameters.



Legacy USB Support

Enable Enables Legacy USB.
Auto Disables support for Legacy when no USB devices are connected.
Disable Keeps USB devices available only for EFI applications.

XHCI Hand-off

This is a workaround for OSs that does not support XHCI hand-off. The XHCI ownership change should be claimed by the XHCI driver.

Chipset

This section gives you functions to configure the system based on the specific features of the chipset. The chipset manages bus speeds and access to system memory resources.

System Agent (SA) Configuration
System Agent (SA) parameters.

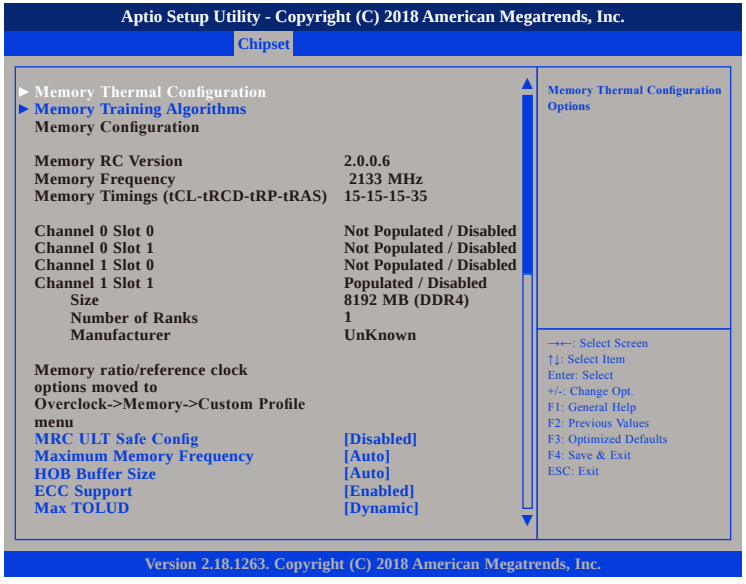
PCH-IO Configuration
PCH-IO parameters.

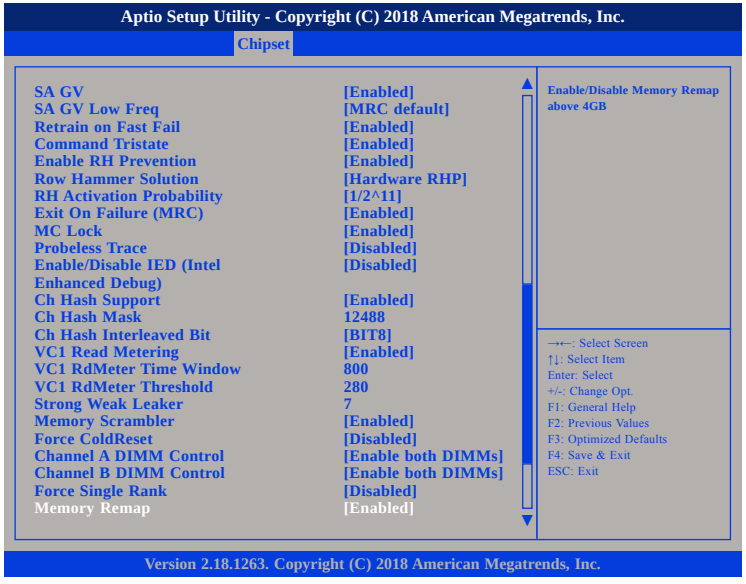
System Agent (SA) Configuration

This section is used to configure the System Agent (SA) configuration.

VT-d
Enables or disables VT-d function on MCH.

Memory Configuration





MRC ULT Safe Config
Enables or disables MRC ULT Safe Config for PO.

Maximum Memory Frequency
Configures the maximum memory frequency.

HOB Buffer Size
Configures the HOB buffer size.

ECC Support
Enables or disables ECC support.

Max TOLUD
Configures the maximum value of TOLUD.

SA GV
Enables or disables System Agent Geyserville.

SA GV Low Freq
Configures the frequency for low point.

Retrain on Fast Fail
Enables or disables the option to restart MRC in Cold mode if SW MemTest fails during fast flow.

Command Tristate
Enables or disables Command Tristate.

Enable RH Prevention
Enables or disables Row Hammer (RH) Prevention.

Row Hammer Solution
Configures the type of method used for Row Hammer Prevention.

RH Activation Probability
Configures the Row Hammer activation probability.

Exit On Failure (MRC)
Enables or disables Exit on Failure for MRC.

MC Lock
Enables or disables MC lock.

Probeless Trace
Enables or disables Probeless Trace.

Enable/Disable IED (Intel Enhanced Debug)
Enables or disables Intel® Enhanced Debug.

Ch Hash Support
Enables or disables Channel Hash support.

Ch Hash Mask
Configures the bit(s) to be included in the XOR function.

Ch Hash Interleaved Bit
Configures the bit used for Channel Hash Interleaved.

VC1 Read Metering
Enables or disables VC1 Read Metering.

VC1 RdMeter Time Window
Configures the VC1 Read Metering Time Window.

VC1 RdMeter Threshold
Configures the VC1 Read Metering Threshold value for the time window.

Strong Weak Leaker
Configures the Strong Weak Leaker value.

Memory Scrambler
Enables or disables Memory Scrambler.

Force ColdReset
Enables or disables force cold reset.

Channel A DIMM Control
Configures the DIMMs enabled or disabled for channel A.

Channel B DIMM Control
Configures the DIMMs enabled or disabled for channel B.

Force Single Rank
Enables or disables the use of only rank 0 in each DIMM.

Memory Remap
Enables or disables Memory Remap above 4GB.

Memory Configuration Cont.

Time Measure
Enables or disables the Time Measure function to print the time needed to execute MRC.

DLL Weak Lock Support
Enables or disables DLL Weak Lock support.

Pwr Down Idle Timer
Configures the Power Down Idle Timer value.

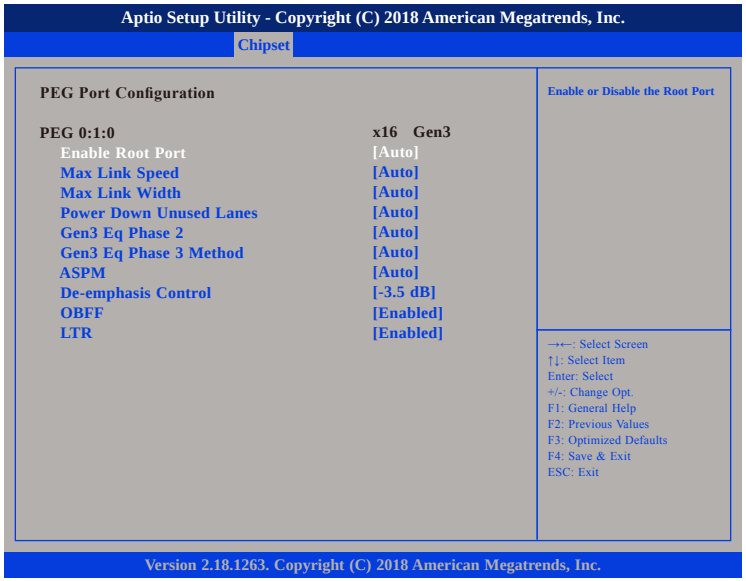
Mrc Fast Boot
Enables or disables fast path through the MRC.

Lpddr Mem WL Set
Configures the LPDDR Memory Write Latency Set.

EV Loader
Enables or disables EV Loader.

EV Loader Delay
Enables or disables EV Loader 2 Second Delay.

PEG Port Configuration



Enable Root Port
Enables or disables the root port.

Max Link Speed
Select the maximum link speed of the PEG device.

Max Link Width
Select the maximum link width of the PEG link.

Power Down Unused Lanes
Enables or disables automatic power down of unused lanes.

Gen3 Eq Phase 2
Enables or disables Gen3 equalization phase 2.

Gen3 Eq Phase 3 Method
Select the Gen3 equalization phase 3 method.

ASPM
Select the ASPM support level for PEG.

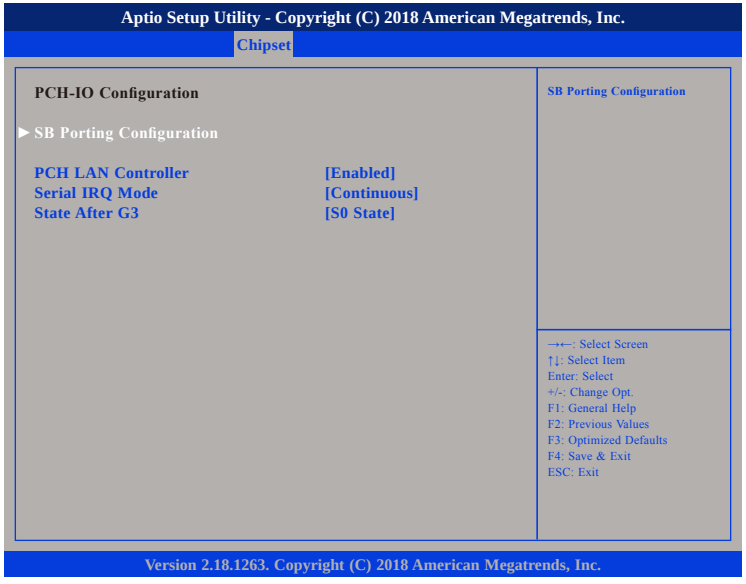
De-emphasis Control
Configures the de-emphasis control for PEG.

OBFF
Enables or disables OBFF (Optimized Buffer Flush/Fill).

LTR
Enables or disables LTR (Latency Tolerance Reporting).

PCH-IO Configuration

This section is used to configure PCH-IO configuration.



PCH LAN Controller

Enables or disables onboard NIC.

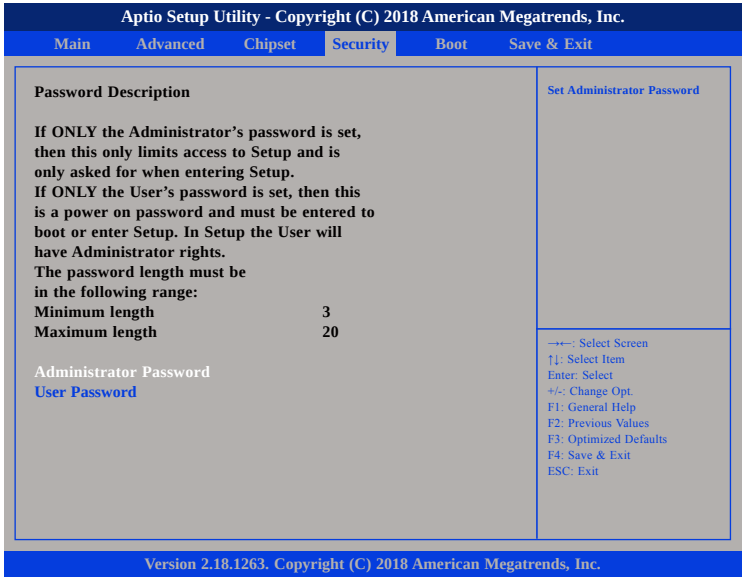
Serial IRQ Mode

Configures the serial IRQ mode.

State After G3

Configures the power state when power is re-applied after a power failure (G3 state).

Security



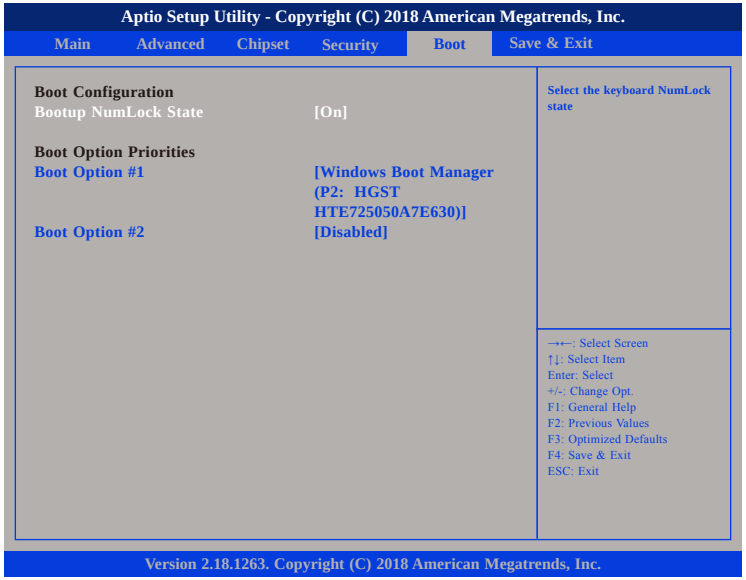
Administrator Password

Select this to reconfigure the administrator's password.

User Password

Select this to reconfigure the user's password.

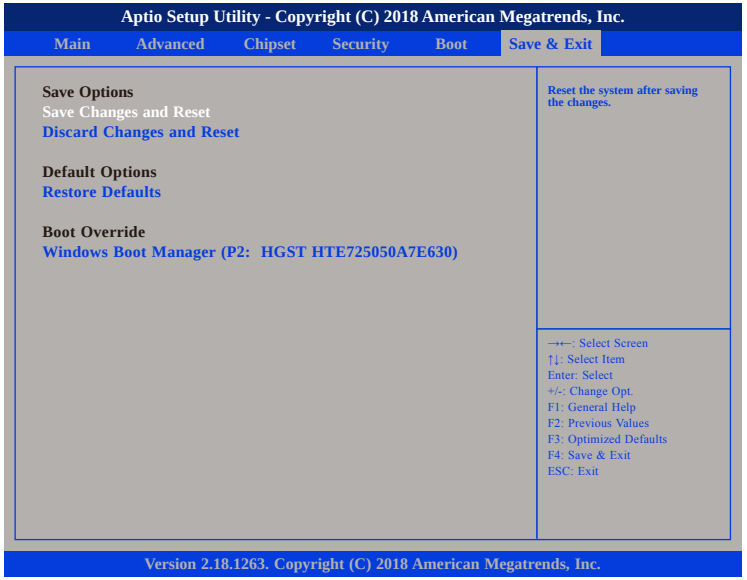
Boot



Bootup NumLock State
This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

Boot Option Priorities
This allows you to adjust the boot sequence of the system. Boot Option #1 is the first boot device that the system will boot from, next will be #2 and so forth.

Save & Exit



Save Changes and Reset
To save the changes and restart the system, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes. You can also press <F4> to save and exit Setup.

Discard Changes and Reset
To exit the Setup utility without saving the changes and restart the system, select this field then press <Enter>. You may be prompted to confirm again before exiting. You can also press <ESC> to exit without saving the changes.

Restore Defaults
To restore the BIOS to default settings, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Boot Override
To bypass the boot sequence from the Boot Option List and boot from a particular device, select the desired device and press <Enter>.

Chapter 5: NDiS B866 TV Wall Settings Guide

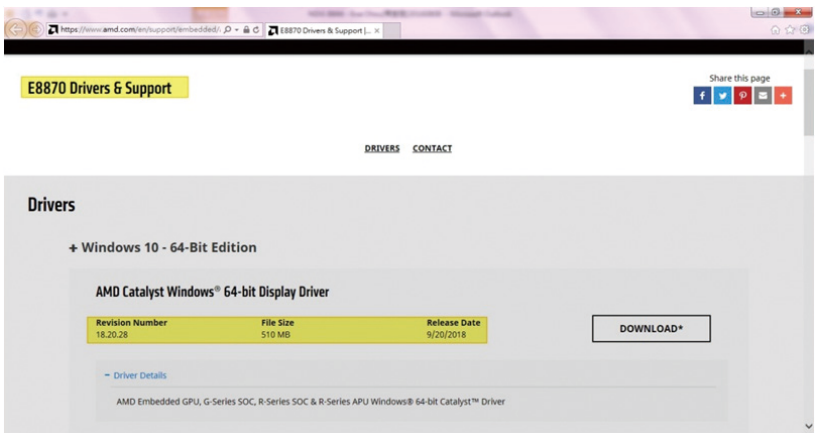
Supported Video Wall Matrix

Number of Displays	Arrangement	
6 Displays	6x1	1 2 3 4 5 6
	3x2	1 2 3 4 5 6
	1x6	Omitted here
5 Displays	5x1	1 2 3 4 5
	1x5	Omitted here
4 Displays	4x1	1 2 3 4
	1x4	Omitted here
	2x2	1 2 3 4
3 Displays	3x1	1 2 3
	1x3	Omitted here
2 Displays	2x1	1 2
	1x2	1 2

Step by Step Settings

1. The following video wall setting instructions use 2x2 as an example.
2. The tested RADEON driver version is 18.20.28. Please note that the latest driver should be downloaded from AMD website for E8870 module.

   (https://www.amd.com/zh-hant/support/embedded/amd-embedded-radeon/amd-embedded-e-series/e8870)



Step 1

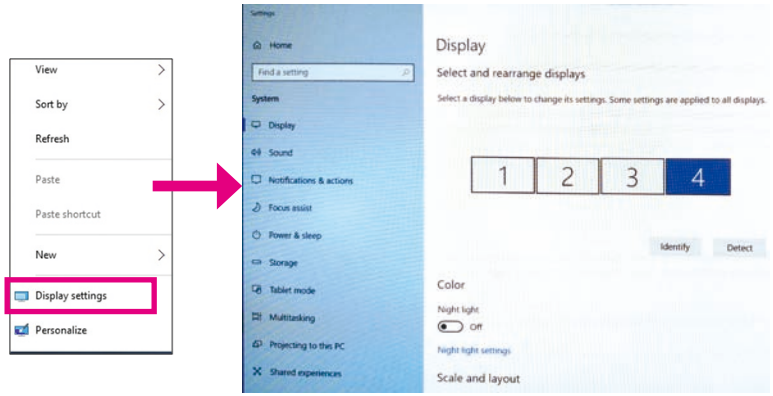
1. Connect the displays to NEXCOM NDiS B866 HDMI ports. In this example, only four HDMI ports are connected.

*How many HDMI ports do you need to connect with?

It depends on display quantity you use. Although there are total six HDMI ports on NDiS B866, please just connect the displays you use to avoid system incorrect identification.

Step 2

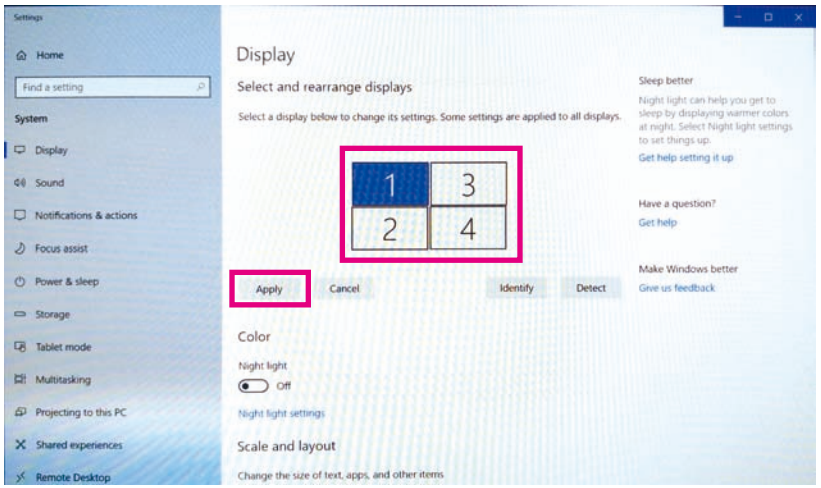
2-1. Right-click on the desktop and select **Display settings**.



2-2. Make sure all the connected displays are detected and the order is correct.

Step 3

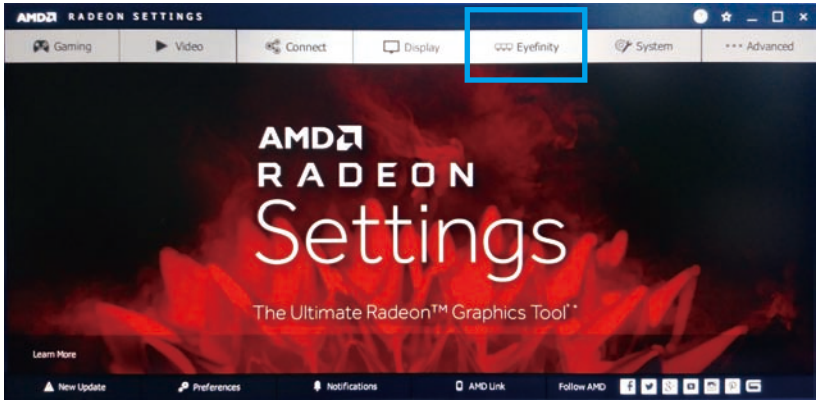
3. Click and drag the displays to change the configuration to the desired layout and click **Apply**.



Step 4

4-1. Right-click on the desktop and select **Radeon** Radeon

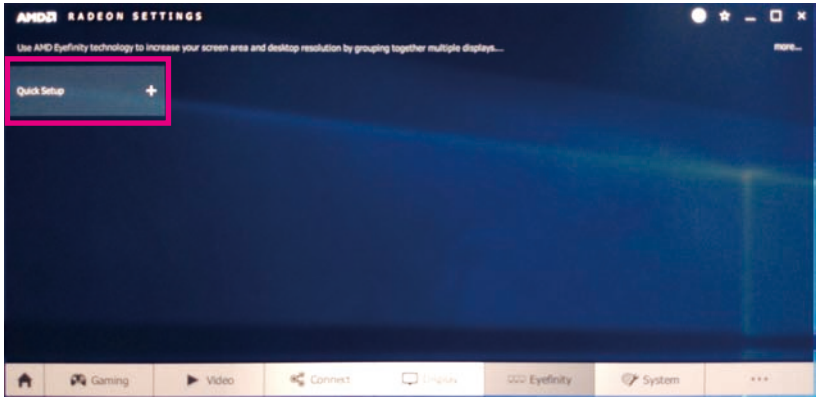
4-2. Select **Eyefinity** in the AMD RADEON main menu.



*Note: The tested AMD RADEON driver version is 18.20.28.

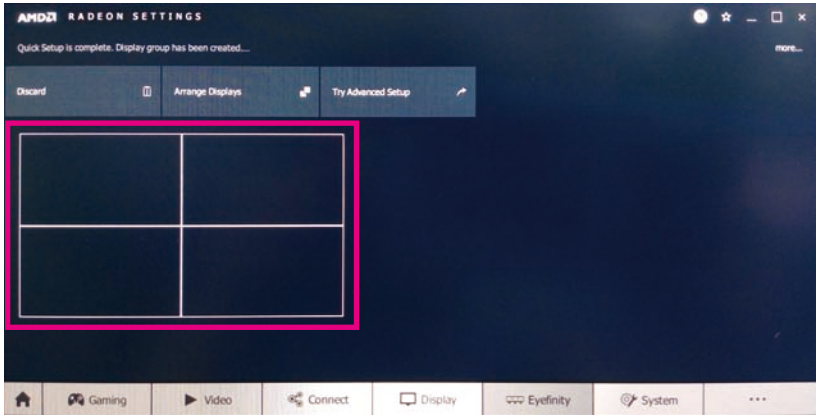
Step 5

5. Click **Quick Setup**.



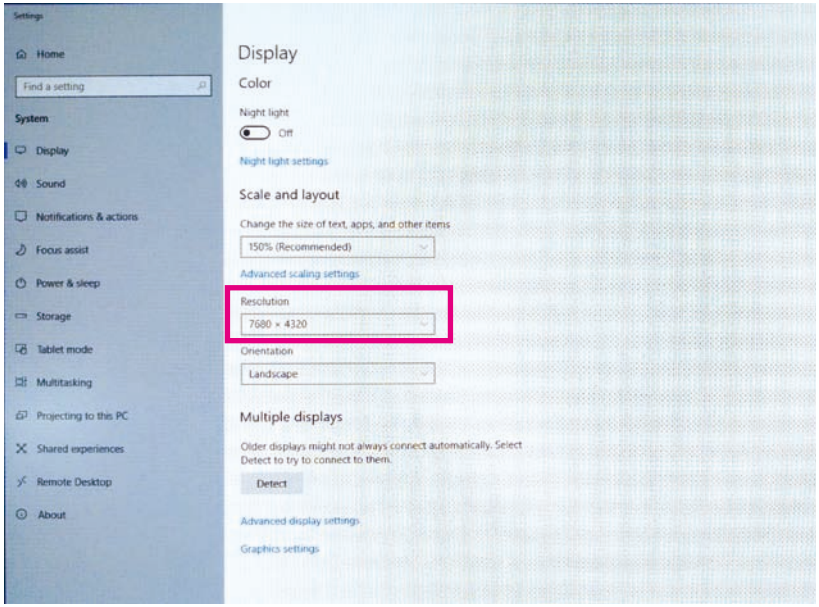
Step 6

6. Finish the setting.



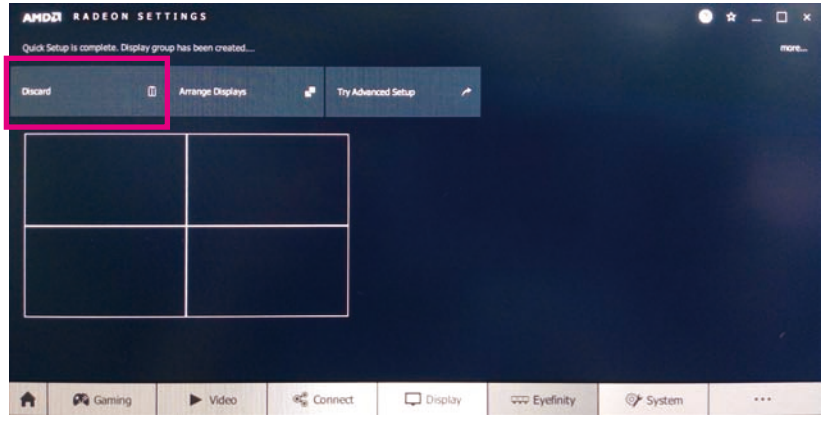
Step 7

7. Go to **Display settings** again and the resolution will become 7680 x 4320 (depends on the resolution of your displays).

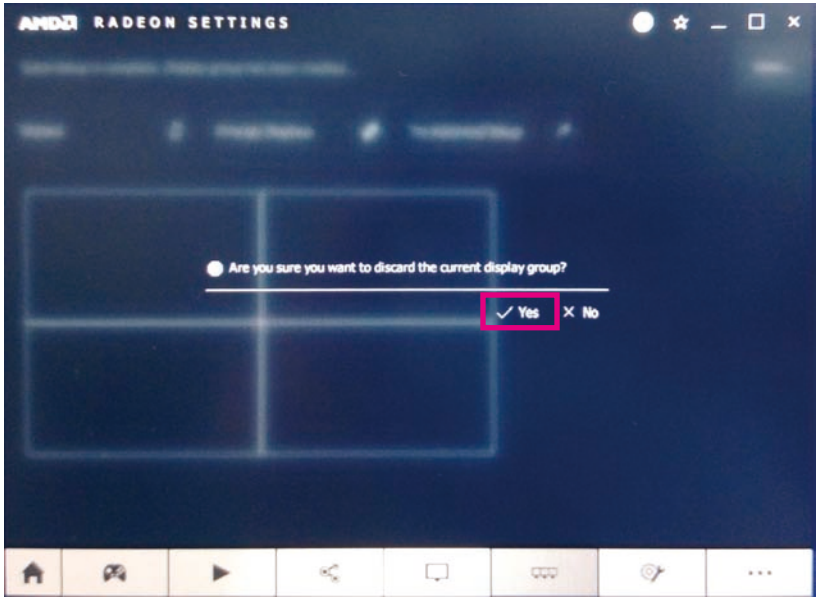


How to Disable the Combined Video Wall Mode?

1. Launch **AMD RADEON** > **Eyefinity** > **Discard**.



2. Click **Yes** to discard the display group.



Appendix A: Watchdog Timer

NDiS B866 features a watchdog timer that resets the CPU or generates an interrupt if the processor stops operating for any reason. This feature ensures system reliability in industrial standalone or unmanned environments.

Watchdog Timer Control Register (Index=71h, Default=00h)

Bit	Description
7	WDT is reset upon a CIR interrupt.
6	WDT is reset upon a KBC (Mouse) interrupt.
5	WDT is reset upon a KBC (Keyboard) interrupt.
4	**Reserved**
3-2	**Reserved**
1	**Force Time-out** This bit is self-cleared.
0	**WDT Status** 1: WDT value is equal to 0. 0: WDT value is not equal to 0.

Watchdog Timer Configuration Register (Index=72h, Default=001s0000b)

Bit	Description
7	**WDT Time-out Value Select 1** 1: Second 0: Minute
6	**WDT Output through KRST (pulse) Enable** 1: Enable 0: Disable
5	**WDT Time-out Value Extra Select** 1: 64ms x WDT Timer-out value (default = 4s) 0: Determined by WDT Time-out value select 1 (bit 7 of this register)
4	**WDT Output through PWRGD Enable** 1: Enable 0: Disable *During LRESET# this bit is selected by JP2 power-on strapping option.*
3-0	**Interrupt Level Select for WDT** Please refer to Interrupt Level Mapping Table.

Watchdog Timer Time-out Value (LSB) Register (Index=73h, Default=38h)

Bit	Description
7-0	WDT Time-out Value 7-0

Watchdog Timer Time-out Value (MSB) Register (Index=74h, Default=00h)

Bit	Description
7-0	WDT Time-out Value 15-8

SMI# Control Register 2 (Index=F1h, Default=00h)

Bit	Description
7	**Reserved**
6	0: Edge trigger 1: Level trigger
5-3	**Reserved**
2	This bit enables the generation of a SMI# due to WDT's IRQ (EN_WDT).
1	This bit enables the generation of a SMI# due to CIR's IRQ (EN_CIR).
0	This bit enables the generation of a SMI# due to PBD's IRQ (EN_PBD).