NEXCOM International Co., Ltd.

Intelligent Platform & Services Business Unit
Edge Computing System
Neu-X60
User Manual

www.nexcom.com

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PREFACE

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Acknowledgements

Neu-X60 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.

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.

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.

18. Ensure to connect the power cord of the power adapter to a socket-outlet with earthing connection.

19. This product is intended to be supplied by a Listed Power Adapter or DC power source, rated 12Vdc, minimum 5A, minimum T ma=40 degree C, minimum altitude of operation=5000m, and evaluated in accordance to UL/IEC 60950-1 and/or UL/IEC 62368-1. If further assistance is needed, please contact NEXCOM International Co., Ltd. (UL file owner or brand owner) for further information.

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 Neu-X60 package that you received is complete. Your package should have all the items listed in the following table.

Item	Part Number	Qty
1	Neu-X60 System	1
2	Power Adapter	1

Item	Part Number	Name	Description	Qty
1	7400050007X00	Power Adapter	POWER ADAPTER W/LOCK EDAC:EA10681G(T09) 50W 12V/4.16A 113x49x35mm	1

Ordering Information

The following below provides ordering information for Neu-X60.

Neu-X60 (P/N:10W100X6000X0)
Intel® N50 processor, Palm-sized Fanless Edge Computing System

CHAPTER 1: PRODUCT INTRODUCTION

Neu-X60 Series

Overview

Front Panel
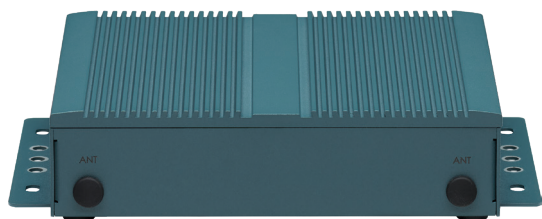
Rear Panel

Key Features

- Intel® Processor N50

- Small footprint in Palm size

- Pre-installed 4G memory

- Pre-installed 128G M.2 storage

- Support 1x Intel® I226-V 2.5GbE LAN

- 1x HDMI®, 1x RS-232/422/485, 2x USB 3.2

- 1x Mini PCIe full size for optional wireless module

- Great value for indoor applications

Hardware Specifications

CPU Support
- Intel® Processor N50 (up to 3.4GHz, TDP 6W)

Graphics
- Intel® UHD Graphics 750MHz

Main Memory
- 1 x SO-DIMM socket, supports up to 16GB DDR4 3200MHz, non-ECC and un-buffered memory
- Pre-installed with one 4G DDR4 memory in system

I/O Interface-Front
- 1 x 12V DC Jack, lockable design
- 1 x Power button with LED
- 1 x RJ45 with LED for 2.5GbE LAN
- 2 x USB 3.2
- 1 x HDMI® 2.0
- 1 x DB9 RS-232/422/485

I/O Interface-Rear
- 2 x Antenna hole

Internal I/O
- 2 x 5-pin header for two USB 2.0 ports

Expansion
- 1 x Full size miniPCIe slot with nano sim slot onboard, support optional WiFi / BT / 4G module

Storage
- 1 x M.2 Key M 2242 storage, supports both SATA & PCIe signals
- Pre-installed with one M.2 Key M 128G SSD in system

Power Supply
- +12V DC Input
- One AC/DC 12V/5A, 50W power adapter in accessory

Environment
- Operating temperature: 0°C to 40°C ambient with 0.7m/s air flow
- Relative humidity: 10% to 95% (non-condensing)
- Vibration protection
  - Random: 2Grms@5~500Hz, IEC 60068-2-64
  - Sinusoidal: 2G@5~500Hz, IEC 60068-2-6

Dimension
- System dimension: 156mm (L) x 119.6mm (W) x 31mm (H) (With bracket)
- System weight: 0.56kg
- Package dimension: 230 x 215 x 115mm
- Package weight: 1.15kg

Operating System
- Windows10 64-bit
- Linux x 4.1

Physical Features

Neu-X60 Front Panel

Grounding Hole   12V DC-In

COM   HDMI   LAN   USB3.0   POWER   + 12V

COM1   HDMI1   LAN1   USB 3.2   Power Button

Neu-X60 Rear Panel

ANT   ANT

Antenna Holes
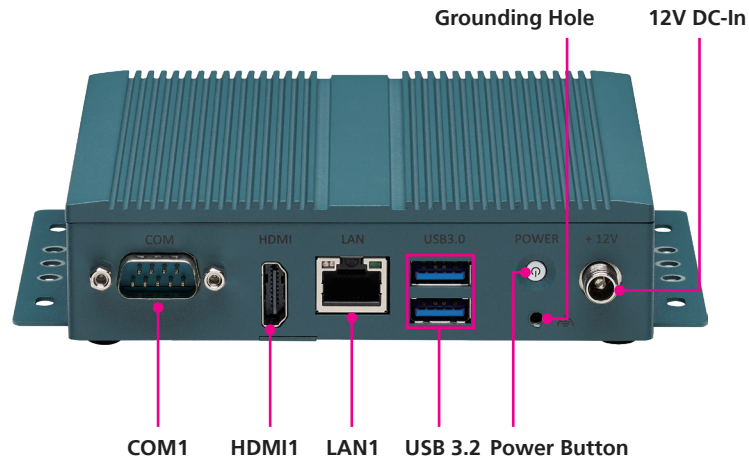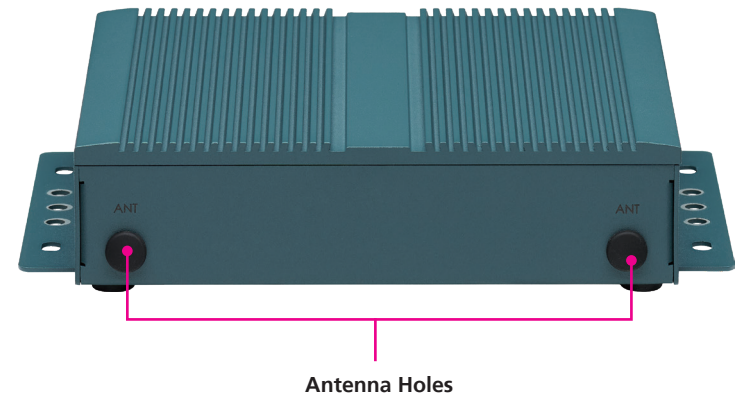
Mechanical Dimensions
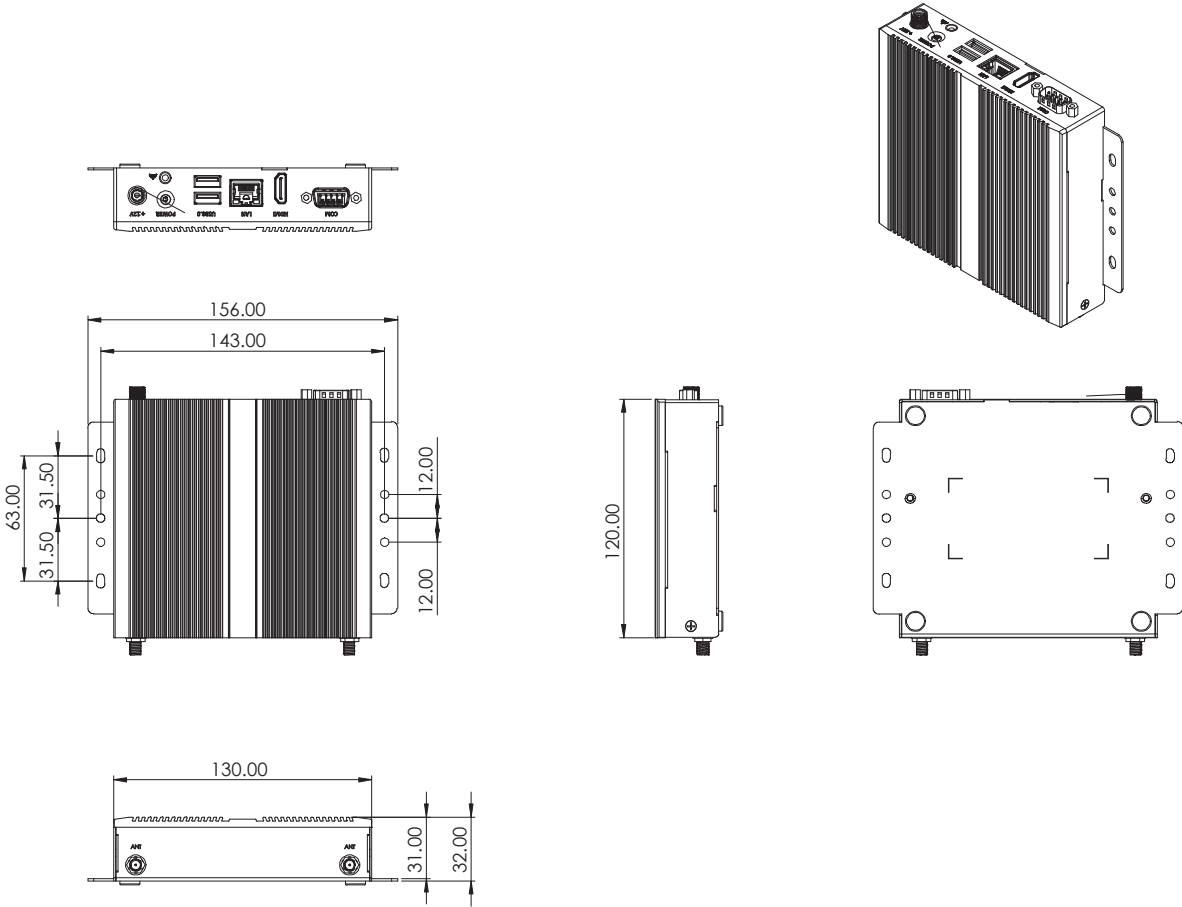
CHAPTER 2: JUMPERS AND CONNECTORS

This chapter lists the locations of the jumpers and connectors for the Neu-X60.

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)
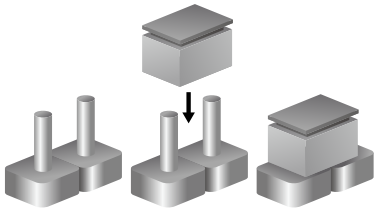
Three-Pin Jumpers: Pins 1 and 2 are Short
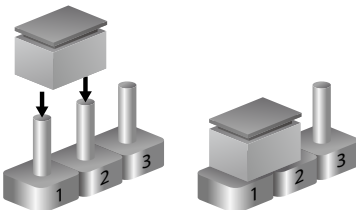
Locations of the Jumpers and Connectors for the Neu-X60 Series

The following figures show the motherboard of Neu-X60 and indicates the locations of jumpers and connectors. Refer to this chapter for detailed pin setting and definitions of connectors marked in pink on this figure.
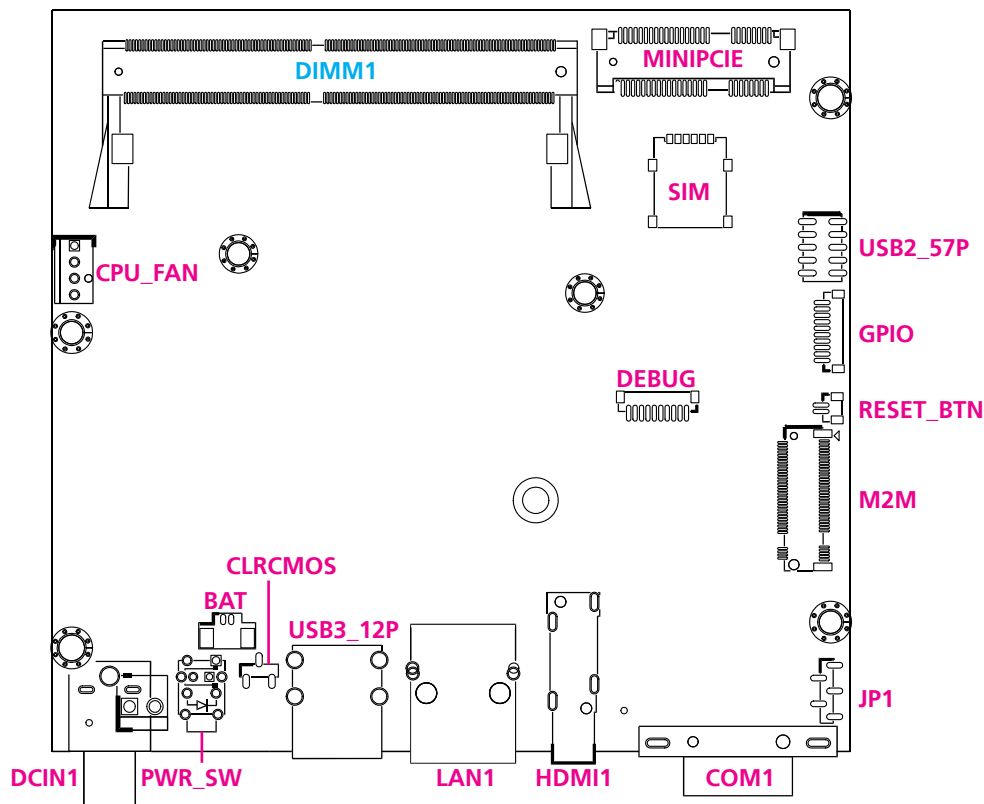
Jumpers & DIP Switches

Clear CMOS

Connector type: 1x3 3-pin header, 2.0mm pitch
Connector location: CLRCMOS

1 ☐○○ 3

Pin	Settings
1-2 On	Normal (Default)
2-3 On	Clear CMOS

COM1 RI Select

Connector type: 1x5-pin header, 2.0mm pitch
Connector location: JP1

1 ☐○○○○ 5

Pin	Settings
1	Ring
2	COM1 Pin9
3	+5V
4	COM1_Pin9
5	+12V

*1-2 On Default

Connector Pin Definitions

External I/O Interfaces

COM1 Port Connector

Connector type: Slim D-SUB connector, 9-pin
Connector location: COM1

DC-In Power Input Jack

Connector type: +12V
Connector location: DCIN1
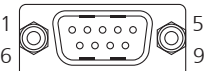
Pin	Definition	Pin	Definition
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	NH1	N.C.
NH2	N.C.	MH1	CGND
MH2	CGND		
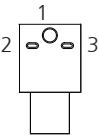
Pin	Settings
1	+12V
2	GND
3	GND

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HDMI® Port

Connector type: HDMI®
Connector location: HDMI1

19 ⌐°°°°°°°°°° 1
18 ⌐°°°°°°°°°° 2
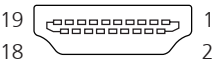
Pin	Definition	Pin	Definition
1	HDMI_TX2P	2	GND
3	HDMI_TX2N	4	HDMI1_TX1P
5	GND	6	HDMI1_TX1N
7	HDMI_TX0P	8	GND
9	HDMI_TX0N	10	HDMI1_CLK_P
11	GND	12	HDMI1_CLK_N
13	NC	14	NC
15	HDMI1_SCL	16	HDMI1_SDA
17	GND	18	HDMI1_P5V
19	HDMI1_HPD	MH1	CGND
MH2	CGND	MH4	CGND
MH4	CGND		

LAN1 Port (i226-V)

Connector type: RJ45 LAN Port W/LED
Connector location: LAN1

LED Indicators
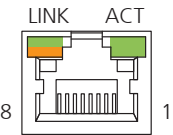
Pin	Definition	Pin	Definition
1	LAN1_MDI0P	2	LAN1_MDI0N
3	LAN1_MDI1P	4	LAN1_MDI1N
5	TCT	6	TCTG
7	LAN1_MDI2P	8	LAN1_MDI2N
9	LAN1_MDI3P	10	LAN1_MDI3N
11	LAN1_LED_ACT_POWER	12	LAN1_LED_ACT#
13	LAN1_LED_LINK100#	14	LAN1_LED_LINK2500#
MH1	CGND	MH2	CGND
NH1	NC	NH2	NC

Link (Left)	Status
Steady Green	2.5G/1G network link
Steady Orange	100Mbps network link
Off	10Mbps/No activity

Act. (Right)	Status
Blinking Green	Data activity
Off	No activity

Power Switch Button

Connector type: Illuminated tact switch
Connector location: PWR_SW
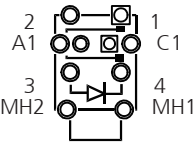
Pin	Settings
1	SWITCH_NODE1
2	SWITCH_NODE2
3	SWITCH_NODE2
4	SWITCH_NODE1
C1	LED-
A1	LED+
MH1	N.C.
MH2	N.C.

USB3.2 Ports

Connector type: USB 3.2 ports (Stacked Type)
Connector location: USB3_12P
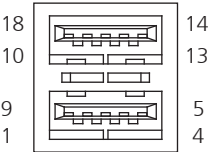
Pin	Definition	Pin	Definition
1	+5V	2	USB2_3N
3	USB2_3P	4	GND
5	USB3_RX3N	6	USB3_RX3P
7	GND	8	USB3_TX3N
9	USB3_TX3P	10	+5V
11	USB2_4N	12	USB2_4P
13	GND	14	USB3_RX4N
15	USB3_RX4P	16	GND
17	USB3_TX4N	18	USB3_TX4P
MH1	CGND	MH2	CGND
MH3	CGND	MH4	CGND

Internal I/O Interfaces

Battery Connector

Connector type: 1x2-pin header, 1.25mm
Connector location: BAT
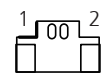
Pin	Definition
1	GND
2	BAT

FAN Connector

Connector type: 1x4-pin header, 2.54mm pitch
Connector location: CPU_FAN
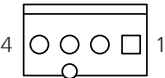
Pin	Definition
1	GND
2	+12V
3	FAN SPEED DETECT
4	FAN SPEED CONTROL

80 Debug Port Connector

Connector type: 1x10-pin header, 1.0mm pitch
Connector location: DEBUG
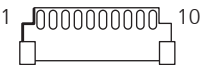
Pin	Definition	Pin	Definition
1	GND	2	PLTRST#
3	ESPI_CLK	4	ESPI_CS#
5	ESPI_IO3	6	ESPI_IO2
7	ESPI_IO1	8	ESPI_IO0
9	ESPI_RST#	10	3.3V

GPIO Connector

Connector type: 1x10-pin header, 1.0mm pitch
Connector location: GPIO
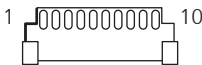
Pin	Definition	Pin	Definition
1	+5V	2	GND
3	GPO0	4	GPO1
5	GPO2	6	GPO3
7	GPI0	8	GPI1
9	GPI2	10	GPI3

M.2 Key M 2242 Connector

Connector type: M.2 Key M, supports SATA, NVMe (PCIe Gen3 x4)
Connector location: M2M
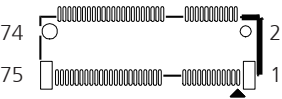
Pin	Definition	Pin	Definition
1	GND	2	VCC3
3	GND	4	VCC3
5	PCIE3_RXN	6	NC
7	PCIE3_RXP	8	NC
9	GND	10	M2M_LED#
11	PCIE3_TXN	12	VCC3
13	PCIE3_TXP	14	VCC3
15	GND	16	VCC3
17	PCIE2_RXN	18	VCC3

Pin	Definition	Pin	Definition
19	PCIE2_RXP	20	NC
21	GND	22	NC
23	PCIE2_TXN	24	NC
25	PCIE2_TXP	26	NC
27	GND	28	NC
29	PCIE1_RXN	30	NC
31	PCIE1_RXP	32	NC
33	GND	34	NC
35	PCIE1_TXN	36	NC

Continued on next page

Pin	Definition	Pin	Definition
37	PCIE1_TXP	38	DEVSLP
39	GND	40	NC
41	SATA_RXP(PCIE0_RXP)	42	NC
43	SATA_RXN(PCIE0_RXN)	44	NC
45	GND	46	NC
47	SATA_TXN(PCIE0_TXN)	48	NC
49	SATA_TXP(PCIE0_TXP)	50	RESET#
51	GND	52	CLKREQ#
53	CLK_PCIEN	54	WAKE#

Pin	Definition	Pin	Definition
55	CLK_PCIEP	56	NC
57	GND	58	NC
67	NC	68	NC
69	M2M_PEDET	70	VCC3
71	GND	72	VCC3
73	GND	74	VCC3
75	GND		

Mini-PCIe Connector

Connector type: Mini-PCIe, supports PCIe & USB2.0, does not support SATA
Connector location: MINIPCIE
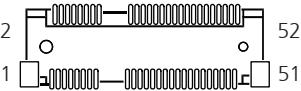
Pin	Definition	Pin	Definition
1	WAKE#	2	3.3V
3	NC	4	GND
5	NC	6	1.5V
7	CLKREQ#	8	UIM_PWR
9	GND	10	UIM_DATA
11	CLKN0	12	UIM_CLK
13	CLKP0	14	UIM_RESET
15	GND	16	UIM_VPP
17	NC	18	GND

Pin	Definition	Pin	Definition
19	NC	20	W_DIS#
21	GND	22	RESET#
23	PCIE5_RXN / SATA_RXP	24	3.3V
25	PCIE5_RXP / SATA_RXN	26	GND
27	GND	28	1.5V
29	GND	30	SMB_CLK
31	PCIE5_TXN / SATA_TXN	32	SMB_DATA
33	PCIE5_TXP / SATA_TXP	34	GND
35	GND	36	USB2_6DN
37	GND	38	USB2_6DP

Pin	Definition	Pin	Definition
39	3.3V	40	GND
41	3.3V	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	1.5V
49	NC	50	GND
51	mSATA Presece Detection	52	3.3V

Internal I/O Interfaces
System Reset Button

Connector type: 1x2-pin header, 1.0mm pitch
Connector location: RESET_BTN
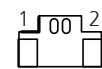
Pin	Definition
1	GND
2	RESET #

SIM Card Connector

Connector type: Nano SIM Card connector
Connector location: SIM
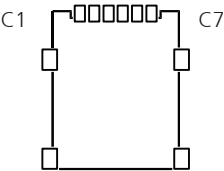
Pin	Definition	Pin	Definition
C1	VCC	C5	GND
C2	RST	C6	VPP
C3	CLK	C7	I/O

Internal USB 2.0 Port

Connector type: 2x5-pin header, 2.0mm pitch
Connector location: USB2_57P
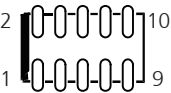
Pin	Definition	Pin	Definition
1	+5V	2	GND
3	USB2_1N	4	GND
5	USB2_1P	6	USB2_2P
7	GND	8	USB2_2N
9	GND	10	+5V

CHAPTER 3: SYSTEM SETUP

Removing the Chassis Cover

CAUTION! Prior to removing the chassis cover, make sure the unit's power is off and disconnected from the power sources to prevent electric shock or system damage.

1. Loosen the screws on the left/right sides of the chassis.

2. Loosen the screws on the bottom, and remove the cover from the chassis.
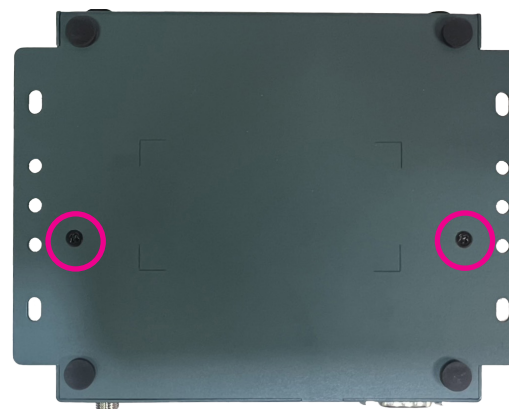
Installing a SO-DIMM Memory Module

Install a memory module into the SO-DIMM socket. Insert the module into the socket at an approximately 30 degree angle. The gold-plated connector on the edge of the module will almost completely disappear inside the socket. Push the module down until the clips on both sides of the socket lock into position.
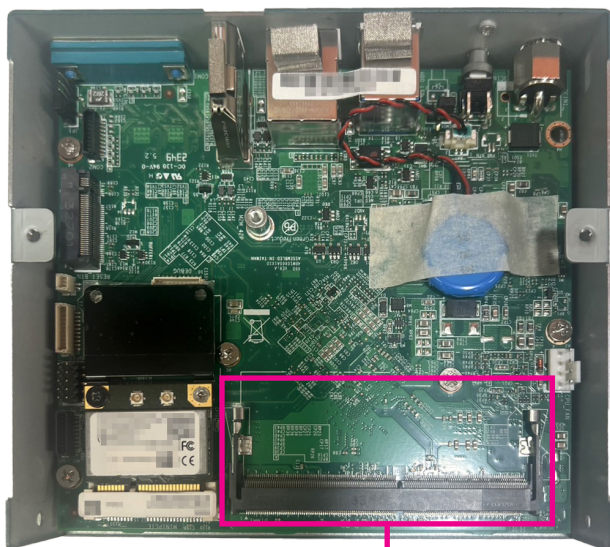
SO-DIMM Socket

Installing an M.2 M Key SSD Module

Insert the M.2 SSD module (2242) into the M.2 slot at a 45 degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot. Push the module down and secure it with a screw.

M.2 M Key Slot
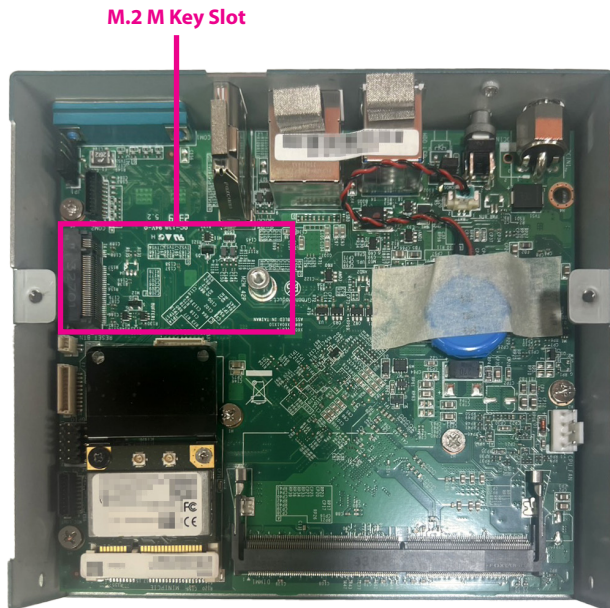
Installing a Half Size Mini-PCIe Wi-Fi Module

1. Screw the mini-PCIe bracket to the mini-PCIe module if using a short card (half card). Note that this bracket is not included in the package.

2. Locate the mini-PCIe slot on the board. Insert the Wi-Fi module into the slot at a 45 degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot. Push the module down and secure it with a screw.
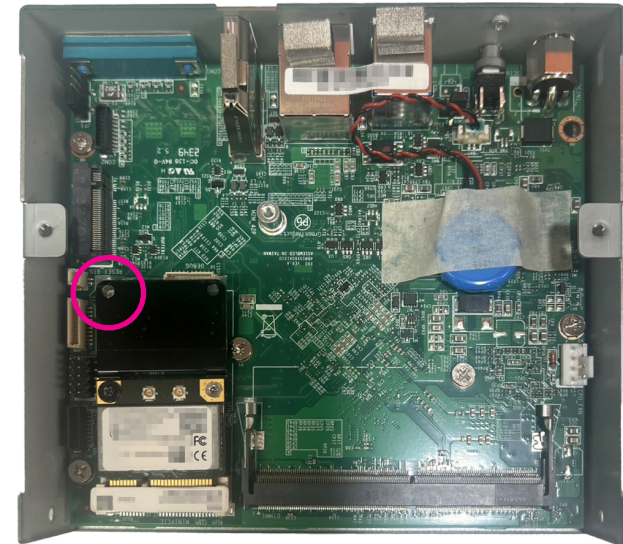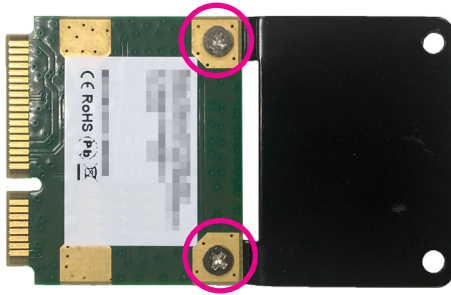
Installing a Mini-PCIe LTE Module

1. Locate the mini-PCIe slot on the board.

2. Insert the LTE module into the slot at a 45 degree angle until the gold-plated connector on the edge of the module completely disappears inside the slot.

3. Tighten the screw (**C**) through the mounting hole on the LTE module to the standoff on the motherboard.

4. Attach the RF cables (**A** and **B**) to the LTE module and insert the antenna jacks end of the cables through the antenna holes. Refer to Assembling the Antennas section for more details.
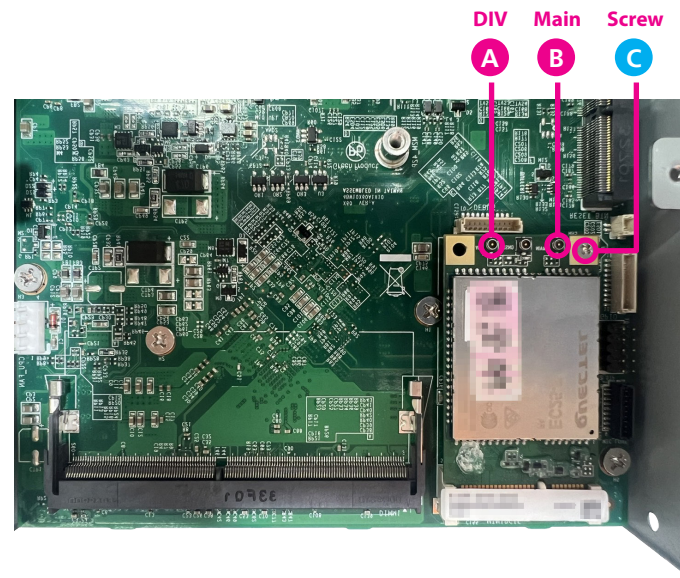
Assembling the Antennas

1. Follow the instructions from the previous section to attach the RF cables to the Wi-Fi module, and then remove the antenna hole covers on the front panel.

2. Insert the antenna jack end of the cables through the antenna holes.

3. Insert the two rings (first ring 1, then ring 2 in that order) into the Wi-Fi antenna jacks.

Ring 2   Ring 1
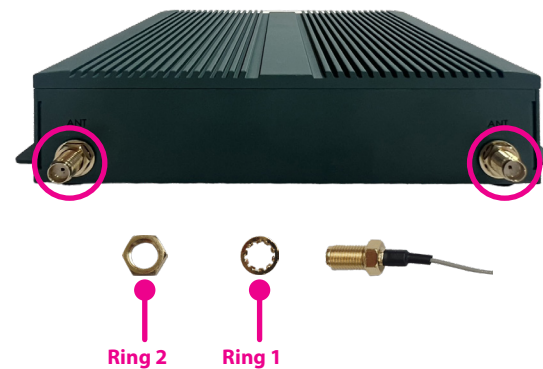
4. Connect the external antennas to the Wi-Fi antenna jacks.

Wall Mounting Instructions

This system supports wall mount installation. Please follow the steps outlined below to complete the installation.

1. Turn the system to its backside.

2. Secure the system to the wall by fastening screws through the mounting holes of the brackets, as indicated in the image below. The recommended screw type is #6-32, L defined by user (Q'ty: 4 pcs).

CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for the Neu-X60. 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 items such 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 ⌨Del 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.
Esc	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.
Tab	Selects a field.
F1	Displays General Help.
F2	Load previous values.
F3	Load optimized default values.
F4	Saves and exits the Setup program.
Enter	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 `Enter` .

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.

```
                        Aptio Setup - AMI
   Main  Advanced  Security  Boot  Save & Exit
/-------------------------------------------------+-------------------------\
|  BIOS Information                              ^|                         |
|  BIOS Vendor            American Megatrends    *|                         |
|  Product Name           NEU-X60                *|                         |
|  BIOS Version           X060-005 x64           *|                         |
|  Build Date and Time    04/08/2024 14:22:35    *|                         |
|                                                *|                         |
|  I226-V #1 MAC Address  00-10-F3-A6-E3-18      *|                         |
|                                                *|                         |
|  Intel(R) N50                                  *|                         |
|  Speed                  1000 MHz               *|-------------------------|
|  Stepping               A0                     *|><: Select Screen        |
|  Microcode Revision     F                      *|^v: Select Item          |
|                                                *|Enter: Select            |
|  IGFX GOP Version       21.0.1063              *|+/-: Change Opt.         |
|  ME FW Version          16.50.0.1232           *|F1: General Help         |
|  Total Memory              4096 MB             +|F2: Previous Values      |
|  Memory Frequency          3200 MHz            +|F3: Optimized Defaults   |
|                                                v|F4: Save & Exit          |
|                                                 |ESC: Exit                |
\-------------------------------------------------+-------------------------/
              Version 2.22.1288 Copyright (C) 2024 AMI
```

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 2005 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.
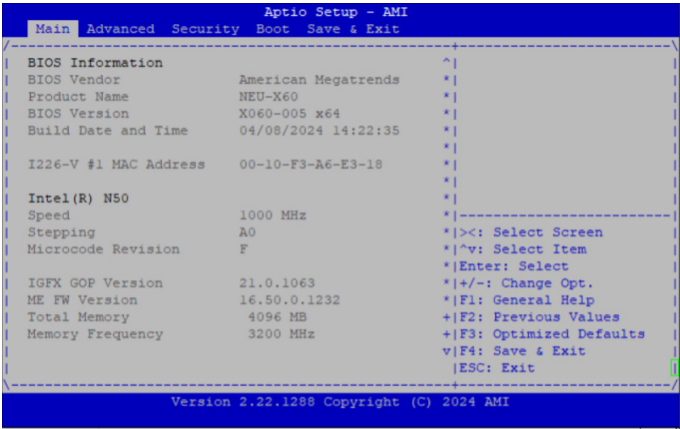
Advanced

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.

```
                          Aptio Setup - AMI
        Main  Advanced  Security  Boot  Save & Exit
/------------------------------------------+--------------------------\
|  USB Power State in S5      [ON]         |Specify what state to     |
|  State After Power Loss     [S0 State]   |go to when power is       |
|                                          |re-applied after a        |
|  Wake on LAN/COM            [Enabled]    |power failure (G3         |
|                                          |state).                   |
|> CPU Configuration                       |                          |
|> SATA Configuration                      |                          |
|> ACPI Settings                           |                          |
|> F81804 Super IO Configuration           |                          |
|> Hardware Monitor                        |--------------------------|
|> Serial Port Console Redirection         |><: Select Screen         |
|> Network Stack Configuration             |^v: Select Item           |
|> NVMe Configuration                      |Enter: Select             |
|                                          |+/-: Change Opt.          |
|                                          |F1: General Help          |
|                                          |F2: Previous Values       |
|                                          |F3: Optimized Defaults    |
|                                          |F4: Save & Exit           |
|                                          |ESC: Exit                 |
\------------------------------------------+--------------------------/
            Version 2.22.1288 Copyright (C) 2024 AMI
```

USB Power State in S5
Select USB power state in S5.

State After Power Loss
Specify what state to go to when power is re-applied after a power failure (G3 State).

Wake on LAN/COM
Enable or disable integrated LAN/COM port RI to wake the system.

CPU Configuration

```
                        Aptio Setup - AMI
    Advanced
/------------------------------------------+-----------------------\
| CPU Configuration                        ^|Displays the E-core    |
|                                          *|Information             |
|> Efficient-core Information              *|                       |
|> Performance-core Information            *|                       |
|                                          *|                       |
|  ID                    0xB06E0           *|                       |
|  Brand String          Intel(R) N50      *|                       |
|  VMX                   Supported         *|                       |
|                                          *|                       |
|  Intel (VMX)           [Enabled]         *|-----------------------|
|  Virtualization                          *|><: Select Screen      |
|  Technology                              *|^v: Select Item        |
|  PECI                  [Enabled]         *|Enter: Select          |
|  AVX                   [Enabled]         *|+/-: Change Opt.        |
|  Active Efficient-cores [All]            +|F1: General Help       |
|  BIST                  [Disabled]        +|F2: Previous Values    |
|  AP threads Idle Manner [MWAIT Loop]     +|F3: Optimized Defaults |
|  AES                   [Enabled]         v|F4: Save & Exit        |
|                                           |ESC: Exit              |
\------------------------------------------+-----------------------/
              Version 2.22.1288 Copyright (C) 2024 AMI
```

Efficient-core Information
Press to display the E-core information.

Performance-core Information
Press to display the P-core information. If the information page displays "N/A," it indicates that the system does not support this feature.

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

PECI
Enable or Disable PECI (Platform Environment Control Interface).

AVX
Enable or disable the AVX 2 instructions. This is applicable for Performance core only.

Active Efficient-cores
This is allows you to select the number of E-cores to enable in each processor package. **NOTE:** Number of P-Cores and E-Cores are looked at together. When both are {0,0}, Pcode will enable all cores.

BIST
Enable or disable BIST (Built-in Self Test) on reset.

AP threads Idle Manner
AP Threads Idle Manner for waiting signal to run.

AES
Enable or Disable AES (Advanced Encryption Standard).

MachineCheck
Enable or disable Machine Check.

MotionMWait
Enable or disable MonitorMwait; If disable MonitorMwait, the AP threads Idle Manner should not set in MWAIT Loop.

Turbo Mode
Enable or disable processor turbo mode (requires EMTTM enabled too). Auto means enabled.

CPU SMM Enhancement
Enter the sub-menu of CPU SMM Enhancement.

SATA Configuration

```
                    Aptio Setup - AMI
      Advanced
/---------------------------------------------------------------\
| SATA Configuration                    |Enable/Disable SATA    |
|                                       |Device.                |
| SATA Controller(s)      [Enabled]     |                       |
| SATA Test Mode          [Disabled]    |                       |
|                                       |                       |
| Serial ATA Port 1       Empty         |                       |
|                                       |                       |
|                                       |                       |
|                                       |                       |
|                                       |-----------------------|
|                                       |><: Select Screen      |
|                                       |^v: Select Item        |
|                                       |Enter: Select          |
|                                       |+/-: Change Opt.       |
|                                       |F1: General Help       |
|                                       |F2: Previous Values    |
|                                       |F3: Optimized Defaults |
|                                       |F4: Save & Exit        |
|                                       |ESC: Exit              |
\---------------------------------------------------------------/
               Version 2.22.1288 Copyright (C) 2024 AMI
```
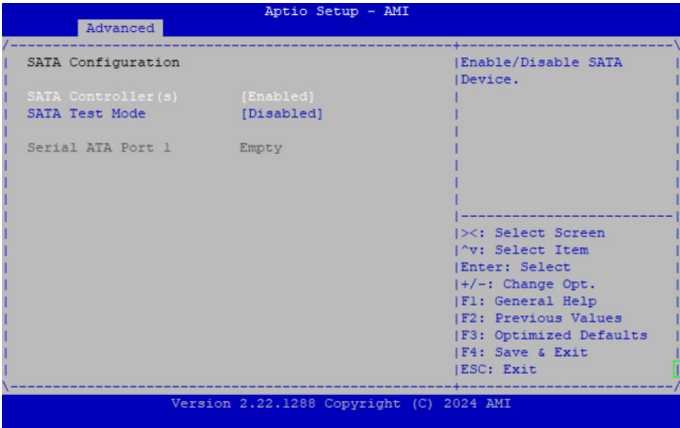
SATA Controller(s)
Enable or disable a SATA device.

SATA Test Mode
Enable or disable test mode (loop back).

ACPI Settings

```
                    Aptio Setup - AMI
      Advanced
/---------------------------------------------------------------\
| ACPI Settings                         |Enables or Disables    |
|                                       |System ability to      |
|                                       |Hibernate (OS/S4 Sleep |
| Enable Hibernation      [Enabled]     |State). This option may|
| ACPI Sleep State    [S3 (Suspend to RAM)] |not be effective with |
|                                       |some operating systems.|
|                                       |                       |
|                                       |                       |
|                                       |                       |
|                                       |-----------------------|
|                                       |><: Select Screen      |
|                                       |^v: Select Item        |
|                                       |Enter: Select          |
|                                       |+/-: Change Opt.       |
|                                       |F1: General Help       |
|                                       |F2: Previous Values    |
|                                       |F3: Optimized Defaults |
|                                       |F4: Save & Exit        |
|                                       |ESC: Exit              |
\---------------------------------------------------------------/
               Version 2.22.1288 Copyright (C) 2024 AMI
```

Enable Hibernation
Enable or disable system ability to hibernate (OS/S4 Sleep State). This option may not be effective with some OS.

ACPI Sleep State
Select the highest ACPI sleep state the system will enter when the suspend button is pressed.

F81804 Super IO Configuration

```
                    Aptio Setup - AMI
   +--------+
   |Advanced|
+----------------------------------------\-----------------------\
| F81804 Super IO Configuration           |Set Parameters of     |
|                                         |Serial Port 1 (COMA)  |
| Super IO Chip          F81804           |                      |
|> Serial Port 1 Configuration            |                      |
|                                         |                      |
|                                         |                      |
|                                         |                      |
|                                         |                      |
|                                         |----------------------|
|                                         |><: Select Screen     |
|                                         |^v: Select Item       |
|                                         |Enter: Select         |
|                                         |+/-: Change Opt.      |
|                                         |F1: General Help      |
|                                         |F2: Previous Values   |
|                                         |F3: Optimized Defaults|
|                                         |F4: Save & Exit       |
|                                         |ESC: Exit             |
+------------------------------------------------------------------+
            Version 2.22.1288 Copyright (C) 2024 AMI
```
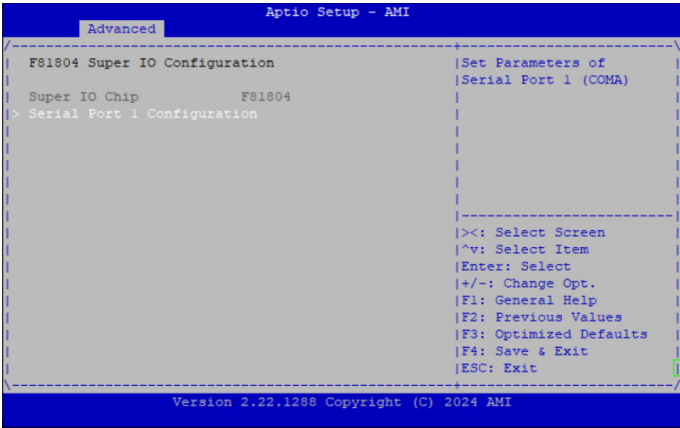
Serial Port 1 Configuration
Press <Enter> to set parameters of serial port 1 (COMA).

Hardware Monitor

```
                    Aptio Setup - AMI
   +--------+
   |Advanced|
+----------------------------------------\-----------------------\
| Pc Health Status                        |                      |
|                                         |                      |
| System 1 Temperature     : +34 .        |                      |
| System 1 Temperature Close to CPU.      |                      |
|                                         |                      |
| System 2 Temperature     : +28 .        |                      |
|                                         |                      |
| CPU FAN Speed            : 6276 RPM      |                      |
|                                         |                      |
| +VCORE                   : +1.064 V     |----------------------|
| VCC5                     : +5.213 V     |><: Select Screen     |
|                                         |^v: Select Item       |
|                                         |Enter: Select         |
|                                         |+/-: Change Opt.      |
|                                         |F1: General Help      |
|                                         |F2: Previous Values   |
|                                         |F3: Optimized Defaults|
|                                         |F4: Save & Exit       |
|                                         |ESC: Exit             |
+------------------------------------------------------------------+
            Version 2.22.1288 Copyright (C) 2024 AMI
```
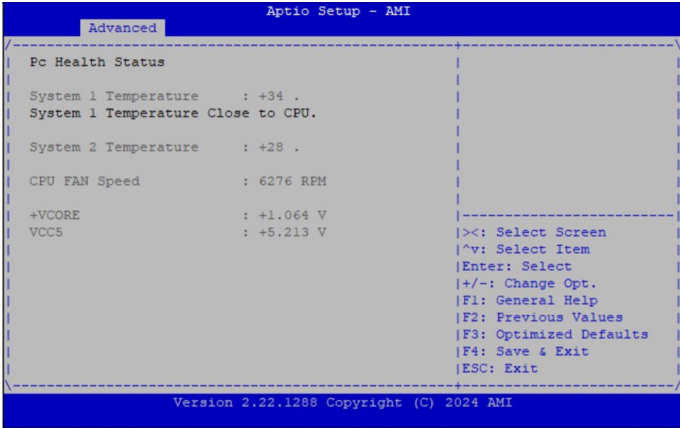
PC Health Status
Displays the temperatures of systems, CPU Fan speed, and voltages.

Network Stack Configuration

```
                    Aptio Setup - AMI
    |Advanced|
 /--------------------------------------------------------------\
 |                                           |Enable/Disable UEFI|
 | Network Stack        [Disabled]           |Network Stack      |
 |                                           |                   |
 |                                           |                   |
 |                                           |                   |
 |                                           |                   |
 |                                           |                   |
 |                                           |                   |
 |                                           |-------------------|
 |                                           |><: Select Screen  |
 |                                           |^v: Select Item    |
 |                                           |Enter: Select      |
 |                                           |+/-: Change Opt.   |
 |                                           |F1: General Help   |
 |                                           |F2: Previous Values|
 |                                           |F3: Optimized Defaults|
 |                                           |F4: Save & Exit    |
 |                                           |ESC: Exit          |
 \--------------------------------------------------------------/
            Version 2.22.1288 Copyright (C) 2024 AMI
```
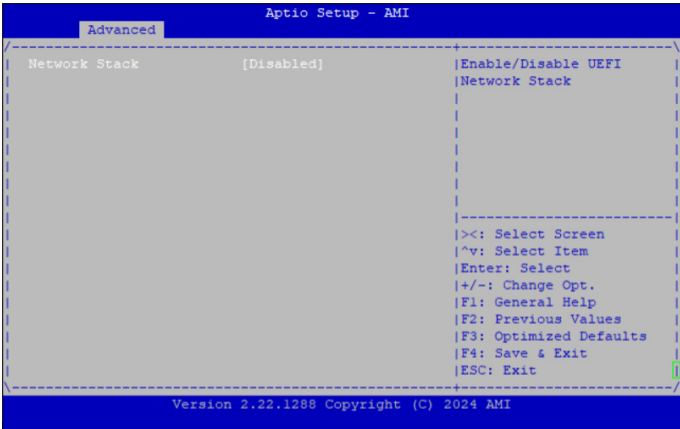
Network Stack

Enable or disable UEFI Network Stack. Once enabled, more options will be available for configuration.

Network Stack

```
                    Aptio Setup - AMI
    |Advanced|
 /--------------------------------------------------------------\
 | Network Stack        [Enabled]            |Enable/Disable IPv4 PXE|
 | IPv4 PXE Support     [Enabled]            |boot support. If   |
 | IPv4 HTTP Support    [Disabled]           |disabled, IPv4 PXE boot|
 | IPv6 PXE Support     [Disabled]           |support will not be |
 | IPv6 HTTP Support    [Disabled]           |available.         |
 | PXE boot wait time    0                   |                   |
 | Media detect count    1                   |                   |
 |                                           |                   |
 |                                           |-------------------|
 |                                           |><: Select Screen  |
 |                                           |^v: Select Item    |
 |                                           |Enter: Select      |
 |                                           |+/-: Change Opt.   |
 |                                           |F1: General Help   |
 |                                           |F2: Previous Values|
 |                                           |F3: Optimized Defaults|
 |                                           |F4: Save & Exit    |
 |                                           |ESC: Exit          |
 \--------------------------------------------------------------/
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```

Network Stack

Enable or disable UEFI network stack. More options will be available for configuration when enabled.

Ipv4 PXE Support

Enable or disable IPv4 PXE support. If disabled, the IPv4 boot option will not be created.

Ipv4 HTTP Support

Enable or disable IPv4 HTTP support. If disabled, the IPv4 boot option will not be created.

Ipv6 PXE Support
Enable or disable IPv6 PXE support. If disabled, the IPv6 boot option will not be created.

Ipv6HTTP Support
Enable or disable IPv6 HTTP support. If disabled, the IPv6 boot option will not be created.

PXE boot wait time
Wait time in seconds tp press ESC key to abort the PXE boot. Use either +/- or numeric keys to set the value.

Media detect count
Number of times presence of media will be checked. Use either +/- or numeric keys to set the value.

NVMe Configuration

This section is used to configure the NVMe devices. The options will become available once the system detects an installed NVMe device.

Security

```
                        Aptio Setup - AMI
       Main  Advanced  Security  Boot  Save & Exit
/--------------------------------------------------\
| Password Description                |Set Administrator   |
|                                     |Password            |
| The password length must be         |                    |
| in the following range:             |                    |
| Minimum length         3            |                    |
| Maximum length        20            |                    |
|                                     |                    |
| Administrator Password              |                    |
|                                     |                    |
|                                     |--------------------|
|                                     |><: Select Screen   |
|                                     |^v: Select Item     |
|                                     |Enter: Select       |
|                                     |+/-: Change Opt.    |
|                                     |F1: General Help    |
|                                     |F2: Previous Values |
|                                     |F3: Optimized Defaults|
|                                     |F4: Save & Exit     |
|                                     |ESC: Exit           |
\--------------------------------------------------/
         Version 2.22.1288 Copyright (C) 2024 AMI
```

Administrator Password

Select to reconfigure the administrator's password.

Boot

This section is used to configure the boot features.

```
                    Aptio Setup - AMI
    Main  Advanced  Security  Boot  Save & Exit
/------------------------------------------\/------------------------\
| Boot Configuration                       ||Select the keyboard     |
| Bootup NumLock State        [On]         ||NumLock state           |
| Quiet Boot                  [Disabled]   ||                        |
|                                          ||                        |
| Boot Option Priorities                   ||                        |
| Boot Option #1              [UEFI: Built-in EFI|                   |
|                             Shell]       ||                        |
|                                          ||                        |
|                                          ||                        |
|                                          ||                        |
|                                          ||------------------------|
|                                          ||><: Select Screen       |
|                                          ||^v: Select Item         |
|                                          ||Enter: Select           |
|                                          ||+/-: Change Opt.        |
|                                          ||F1: General Help        |
|                                          ||F2: Previous Values     |
|                                          ||F3: Optimized Defaults  |
|                                          ||F4: Save & Exit         |
|                                          ||ESC: Exit               |
\------------------------------------------/\------------------------/
           Version 2.22.1288 Copyright (C) 2024 AMI
```

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.

Quiet Boot

Enable or disable quiet boot function.

Boot Option Priorities

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

```
                        Aptio Setup - AMI
     Main  Advanced  Security  Boot  Save & Exit
/-----------------------------------------|------------------------\
|  Save Options                           |                        |
|  Save Changes and Exit                  |                        |
|  Discard Changes and Exit               |                        |
|                                         |                        |
|  Default Options                        |                        |
|  Restore Defaults                       |                        |
|                                         |                        |
|  Boot Override                          |                        |
|  UEFI: Built-in EFI Shell               |                        |
|                                         |------------------------|
|                                         |><: Select Screen       |
|                                         |^v: Select Item         |
|                                         |Enter: Select           |
|                                         |+/-: Change Opt.        |
|                                         |F1: General Help        |
|                                         |F2: Previous Values     |
|                                         |F3: Optimized Defaults  |
|                                         |F4: Save & Exit         |
|                                         |ESC: Exit               |
\-----------------------------------------------------------------/
        Version 2.22.1288 Copyright (C) 2024 AMI
```
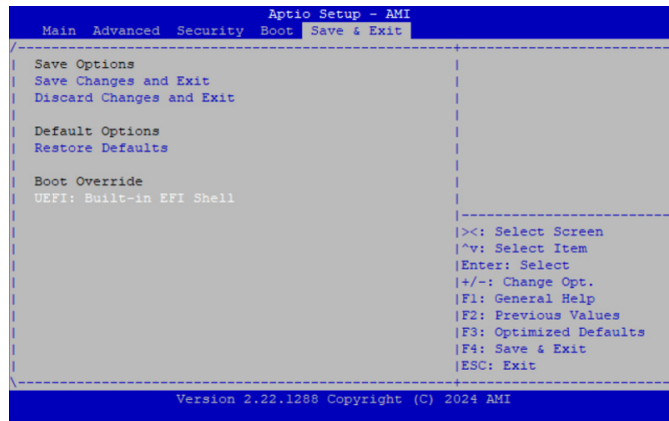
Save Changes and Exit

To save the changes and exit the Setup utility, 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 Exit

To exit the Setup utility without saving the changes, 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>.

APPENDIX A: POWER CONSUMPTION

Power Consumption Management

Purpose

This chapter is to measure maximum momentary current.

Test Equipment

1. GWInstek PSW 30-36 360W DC power supply
2. Tektronix MDO3034
3. GWInstek GPC-530

Device Under Test

DUT: Sys#1

Test Procedure

1. Use DC power supply to measure the power consumption.
2. Full-Loading Test program: Win 10 x64 with BurnIn Test V10.1 (1007)

Test Data

BurnIn Item	Test	BurnIn Item	Test
2D Graphic	V	Serial Port (COM)	V
3D Graphic	V	Sound	V
CPU	V	Video playback	V
Disk (M.2 SATA)	V	USB Port x2	V
(Connect load device)	V	USB Port x6	
GPGPU	V	Network	V
Memory (RAM)	V		

Modes (SATA M.2)		+12V
S3 Mode	Current (A)	0.15 A
	Total Watts(W)	1.80 W
Idle Mode	Current (A)	0.66 A
	Total Watts(W)	7.92 W
Full-Loading Mode	Current (A)	1.61 A
	Total Watts(W)	19.32 W
開機瞬間的最大電流值	Current (A)	1.48 A
進入到os時的瞬間最大電流值	Current (A)	2.28 A

APPENDIX B: GPI/O PROGRAMMING GUIDE

F81804U GPI/O Programming Guide (PCB A)

GPI/O (General Purpose Input/Output) pins are provided for custom system design. This appendix provides definitions and its default setting for the ten GPI/O pins in the Neu-X60 series. The pin definition is shown in the following table:

Pin No.	GPI/O mode	GPI/O	PowerOn Default	Address
1	VCC		-	-
2	GND		-	
3	GPIO_PIN3	GPIO_GPO0	Output High	208h (Bit2)
4	GPIO_PIN4	GPIO_GPO1	Output High	208h (Bit3)
5	GPIO_PIN5	GPIO_GPO2	Output High	208h (Bit7)
6	GPIO_PIN6	GPIO_GPO3	Output High	20Bh (Bit7)
7	GPIO_PIN7	GPIO_GPI0	Input	20Bh (Bit1)
8	GPIO_PIN8	GPIO_GPI1	Input	20Bh (Bit2)
9	GPIO_PIN9	GPIO_GPI2	Input	20Bh (Bit3)
10	GPIO_PIN10	GPIO_GPI3	Input	20Bh (Bit4)

Access GPIO with IO space Address.
Control the GPIO Pin 0/1 level by setting Address A0Bh bit7.
The bit is Set/Clear indicated output High/Low,
same with Read GPIO.

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GPIO Programming Sample Code

```
// Write GPIO_PIN3 High
#define GPIO_PIN3              outportb(0x208, ((inportb(0x208) & 0xF7) | 0x08))
// Write GPIO_PIN6 High
#define GPIO_PIN6              outportb(0x20B, ((inport(0x20B) & 0x7F) | 0x80)
// Read GPIO_PIN8
#define GPIO_PIN8              inportb(0x20B) & 0x04
void main(void)
{
        UINT8 Value = 0;
        GPIO_PIN3;
        GPIO_PIN6;
        Value = GPIO_PIN8;

}
```

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APPENDIX C: DEVICE I/O PROGRAMMING GUIDE

F81804U Device I/O Programming Guide
(PCB A)

Define

SUPERIO_INDEX_PORT = 0x4E
SUPERIO_DATA_PORT = 0x4F

Function	GPI/O	Pin	Type	GPIO=Low (0)	GPIO=High (1)
USB power control	GPIO04	20	O	Enable USB Power	Disabl USB Power
MINIPCIE power control	GPIO00	19	O	Enable MINIPCIE Power	Disable MINIPCIE Power

Programming

```
void main(void)
{
        #Enter SuperIO Configuration
          outportb(SUPERIO_INDEX_PORT, 0x87);
          outportb(SUPERIO_INDEX_PORT, 0x87);

        # Set LDN
          outportb(SUPERIO_INDEX_PORT, 0x07);
          outportb(SUPERIO_DATA_PORT , 0x06);

        # Set Data Register (High/Low)
          outportb(SUPERIO_INDEX_PORT, 0xF1);
          outportb(SUPERIO_DATA_PORT , 0x  );

        # Exit Configuration Mode
          outportb(SUPERIO_INDEX_PORT ,0xAA);

}
```
Note:

0x is a UINT8 data.
- Bit0: for GP00, high is set to "1", low is set to "0".
- Bit4: for GP04, high is set to "1", low is set to "0".

APPENDIX D: WATCHDOG TIMER SETTING

F81804 Watchdog Programming Guide

```
#define WDT_SET          0x215
#define WDT_VALUE        0x216

void main(void)
{
        // Enter SuperIO Configuration
        outportb(WDT_VALUE, 0x03);      // Set timer 3 second.
        outportb(WDT_SET, 0x31);        // Enabled WDT
                                        // Use the second
                                        // Use the minute, change value to 0x39

}
```