NEXCOM International Co., Ltd.

Intelligent Platform & Services Business Unit

High Brightness Touchscreen Computer
HPPC 12&15-10X Series

User Manual

NEXCOM International Co., Ltd.
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www.nexcom.com

CONTENTS

Chapter 4: BIOS Setup

PREFACE

Copyright

Disclaimer

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Acknowledgements

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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.
- Proper grounding is essential to protect against electrical surges and ensure stable operation. Always connect the grounding wire.

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.
- Output of the external power source shall be complied with ES1 and PS2 requirements, output rating is 12 Vdc, minimum 5A, with minimum ambient temperature 50°C and altitude 5000m, and has to be evaluated according to IEC/EN 60950-1 and/or IEC/EN 62368-1.
- Ensure to connect the power cord of power adapter to a socket-outlet with earthing connection.

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.

Global Service Contact Information

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Package Contents

Before continuing, please verify the contents of the product package. The items included are listed in the table below.

HPPC12-10X7211

Item	Part Number	Name	Qty
1	10W60HPPC01X0	HPPC12-10X7211 12.1" TFT 1300 nits Panel PC, P-CAP, Optical Bonding, w/ XPPB-10X7211	1
2	5060200781X00	Memory Thermal Pad	1
3	5060200956X00	Choke Thermal Pad	1
4	5060200954X00	Heat Spreader Thermal Pad	1
5	5044440400X00	Mini PCIe Thermal Pad	1
6	5060200663X00	LAN Chip Thermal Pad	1
7	5060200955X00	M.2 Thermal Pad	1
8	5061712091X00	Heat Spreader	1
9	5061600245X00	WIFI Washer	4
10	4NCPM00302X00	Terminal Blocks 3P Phoenix	1
11	50311F0215X00	Heat Spreader Screws	2

HPPC15-10X7211

Item	Part Number	Name	Qty
1	10W60HPPC00X0	HPPC15-10X7211 15" TFT 1800 nits Panel PC, P-CAP, Optical Bonding, w/ XPPB-10X7211	1
2	5060200781X00	Memory Thermal Pad	1
3	5060200956X00	Choke Thermal Pad	1
4	5060200954X00	Heat Spreader Thermal Pad	1
5	5044440400X00	Mini PCIe Thermal Pad	1
6	5060200663X00	LAN Chip Thermal Pad	1
7	5060200955X00	M.2 Thermal Pad	1
8	5061712091X00	Heat Spreader	1
9	5061600245X00	WIFI Washer	4
10	4NCPM00302X00	Terminal Blocks 3P Phoenix	1
11	50311F0215X00	Heat Spreader Screws	2

Ordering Information

The following provides ordering information.

HPPC 12-10X7211 (P/N:10W60HPPC01X0)

12.1” TFT 1300 nits panel PC, P-CAP, optical bonding, w/ XPPB-10X7211

HPPC 15-10X7211(P/N:10W60HPPC00X0)

HPPC 15-10X7211 15” TFT 1800 nits Panel PC, P-CAP, Optical Bonding, w/ XPPB-10X7211

Panel mount kit (P/N: 5061711301X00)

Panel Mount BKT for XPPC24-100 SIN SUPER CIRCLE 30x20x6mm SECC T=1.6mm

Chapter 1: Product Introduction

HPPC 12-10X7211

Key Features

- 12.1” ratio 4:3 1300nits sunlight readable panel
- Optical bonding with AF, AG, anti-UV & IR treatment
- Embedded light sensor for auto dimming
- Intel Atom® x7211RE processor
- 1 x DDR4 SO-DIMM, up to 32GB
- Expansion: 1 x M.2 Key M, 1 x Mini PCIe
- Support wide range power input DC 12V~24V

Hardware Specifications

Panel

- LCD size: 12.1”, 4:3
- Resolution: XGA 1024x768
- Luminance
  - LCD panel: 1300cd/m2
  - XPPC P-CAP touch: 80% of panel’s luminance after optical bonding
- Contrast ratio: 1000
- LCD color: 16.7M
- Viewing angle: 88 (U), 88 (D), 88 (L), 88 (R)

Touch Screen

- 10-point P-CAP (Projected Capacitive Touch)
- Optical bonding with anti-UV & IR
- Glass surface treatment: AF & AG

System

- Intel Atom® x7211RE processor (embedded)
- Intel® UHD graphics
- TPM 2.0
- Built-in light sensor board & smart fan control

Memory

- 1 x DDR4 SO-DIMM, non-ECC, up to 32GB

Storage Device

- 1 x M.2 Key M 2242 NVMe SSD (PCIe 3.0 x1, SATA 3.0)

Expansion

- 1 x Mini PCIe, supports 4G/Wi-Fi + BT/mSATA

I/O Interface Rear (Top)

- 2 x Antenna hole
- 1 x COM Port (DB9), supports RS-232/422/485
- 1 x Line out

I/O Interface Rear (Bottom)

- 2 x 1GbE RJ45 port, Intel® i210AT
- 1 x HDMI® 2.0b, up to 3840x2160@60Hz
- 2 x USB 3.2 5Gbps, Type-A
- 2 x USB 2.0
- 1 x Power button
- 1 x 3-pin Phoenix connector for DC 12V~24V input I/O Interface-Front

I/O Interface Internal

- 1 x 4-pin header for USB 2.0
- 1 x 4-pin header for speaker out
- 1 x 10-pin header for RS-232
- 1 x 3-pin header for Mic in
- 1 x 3-pin header for PWR LED
- 1 x 10-pin header for 4-in & 4-out GPIO

Power requirement

- Nominal voltage: DC 12V~24V input

Mechanical & Dimension

- Color/Material: black metal sheet
- Support VESA mount 100mm x 100mm
- Dimensions: 293.56mm (W) x 245.46mm (D) x 56.65mm (H)
- Weight: 3.08kg

Package Information

- Dimensions: 438mm (W) x 346mm (D) x 227mm (H)
- Gross weight: 4.01kg (1 unit per carton)

Environment

- Ambient with air flow: -20°C~60°C
- Storage temperature: -20°C~80°C
- Relative humidity: 10%~90% (non-condensing)
- Shock protection: 20G peak acceleration, 11ms according to IEC 60068-2-27
- Vibration protection
  - Random: 2Grms@5Hz~500Hz, IEC 60068-2-64
  - Sinusoidal: 2G@5Hz~500Hz, IEC 60068-2-6

Certification

- CE (EN 55035 + EN 55032)
- FCC Class A (EMI Part 15B)
- LVD (EN 62368-1)

Operating System Support

- Windows 11
- Windows 10 64-bit
- Linux

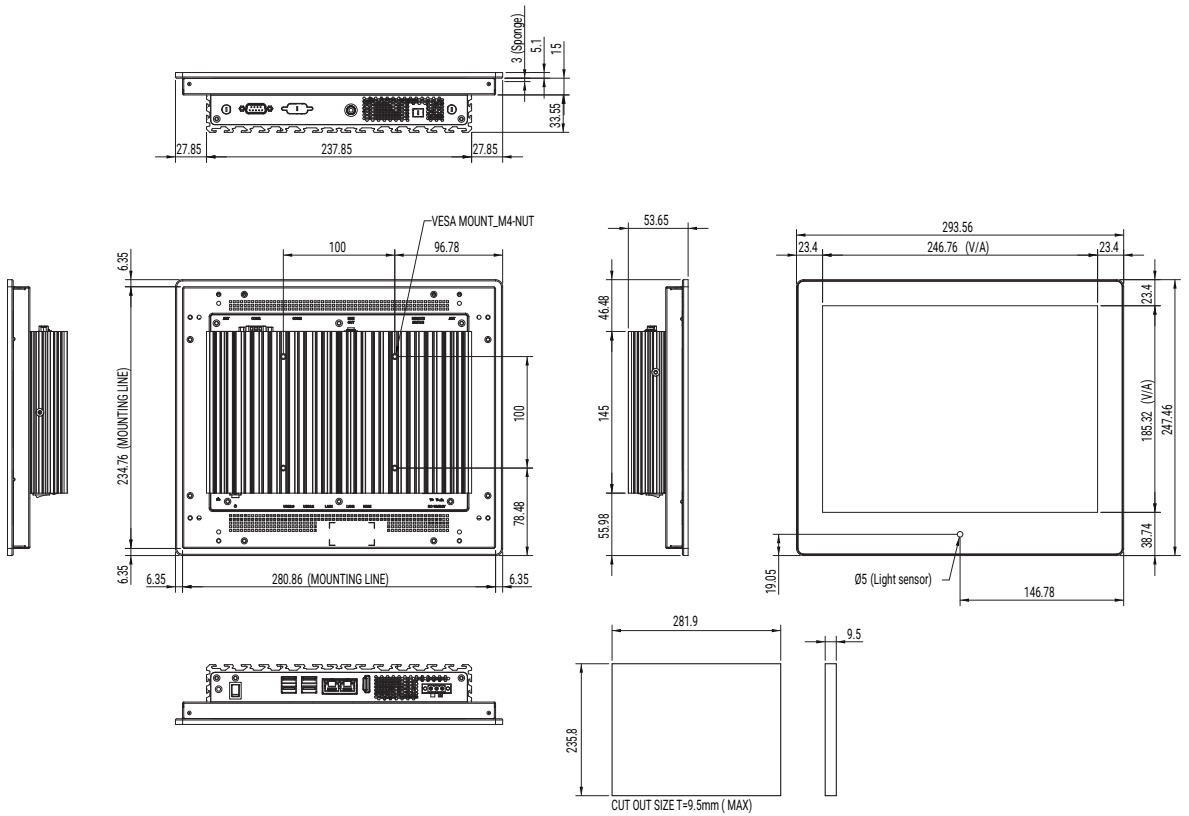
Knowing Your HPPC 12-10X7211

Rear Top

Rear Bottom

1. Antenna hole
2. Line out
3. COM1 (RS-232/422/485)
4. Ground screw
5. Power LED
6. Power switch
7. USB 2.0 Type-A ports
8. USB 3.2 Type-A ports
9. LAN1 & LAN2
   * Both LAN ports support WOL (Wake-on-LAN), but PXE (Preboot Execution Environment) is supported on LAN1 only.
10. HDMI® 2.0b (up to 3840x2160@60Hz)
11. 12V/24V DC input

Mechanical Dimensions



HPPC 15-10X7211

Key Features

- 15” 4:3 ratio 1800 nits sunlight readable panel
- Optical Bonding with AF, AG Anti-UV & IR treatment
- Embedded light sensor for auto-dimming
- 2 x PWM Smart Fan
- Intel Atom® x7211RE Processor 6M Cache, up to 3.2 GHz
- 1 x DDR4 SO-DIMM socket, up to 32GB
- Expansion: 1 x M.2 Key M, 1 x Mini PCIe
- Support wide range power input: DC 12V to 24V

Hardware Specifications

Panel

- LCD size: 15”, 4:3
- Resolution: XGA 1024 x 768
- Luminance
  - LCD panel: 1800 cd/m2
  - XPPC PCAP touch: 80% of panel’s luminance after optical bonding
- Contrast ratio: 2500
- LCD color: 16.7M
- Viewing angle: 88 (U), 88 (D), 88 (L), 88 (R)

Touch Screen

- 10 points P-Cap (Projected CapacitiveTouch)
- Optical bonding with anti-UV & IR
- Glass Surface Treatment: AF & AG

System

- Intel Atom® X7211RE processor (embedded)
- Intel® UHD Graphics
- TPM 2.0
- Built-in light sensor board & smart fan control

Memory

- 1 x M.2 Key M 2242 NVMe SSD (PCIe 3.0 x1,SATA 3.0)
- 1 x Mini PCIe slot, supports mSATA

Storage Device

- 1 x M.2 Key M 2242 NVMe SSD (PCIe 3.0 x1, SATA 3.0)

Expansion

- 1 x Mini PCIe slot
  - Support 4G/Wi-Fi + BT/mSATA

I/O Interface Rear (Top)

- 2 x Antenna hole
- 1 x COM Port (DB9), supports RS-232/422/485
- 1 x Line out

I/O Interface Rear (Bottom)

- 2 x 1GbE RJ45 port, Intel® i210AT
- 1 x HDMI® 2.0b, up to 3840 x 2160@60Hz
- 2 x USB 3.2 5Gbps, Type-A
- 2 x USB 2.0
- 1 x Power button
- 1 x 3-pin Phoenix connector for DC 12 to 24V Input

I/O Interface Internal

- 1 x 4-pin header for USB 2.0
- 1 x 4-pin header for Speaker out
- 1 x 10-pin header for RS-232
- 1 x 3-pin header for MIC in
- 1 x 3-pin header for PWR LED
- 1 x 10-pin header for 4-in & 4-out GPIO

Mechanical & Dimensions

- Color / Material: Black metal sheet
- Support VESA Mount 100mm x 100mm
- System unit:
  - Dimension: 351.9mm(W) x 295.75 mm(D) x 58.15mm(H)
  - Net Weight: 4.2kg
- Package Carton:
  - Dimension: 498mm(W) x 478mm(D) x 181mm(H)
  - Gross weight: 5.8kg (1 unit / Carton)

Power requirement

- Nominal voltage: DC 12V~24V input

Environment

- Operating temperature:
  - Ambient with air flow: -20°C~60°C
  - Storage temperature: -20°C~80°C
- Relative humidity: 10%~90% (non-condensing)
- Shock protection:
  - 20G peak acceleration, 11ms according to IEC 60068-2-27
- Vibration protection:
  - Random: 2Grms@5~500Hz, IEC 60068-2-64
  - Sinusoidal: 2G@5~500Hz, IEC 60068-2-6

Certification

- CE (EN 55035 + EN 55032)
- FCC Class A (EMI Part 15B)
- LVD (EN 62368-1)

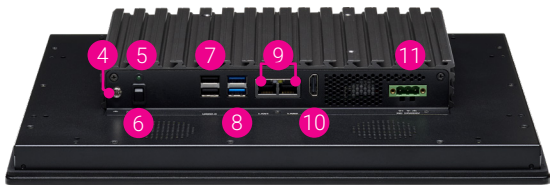
Operating System Support

- Windows 11
- Windows 10 64-bit
- Linux

Knowing Your HPPC 15-10X7211

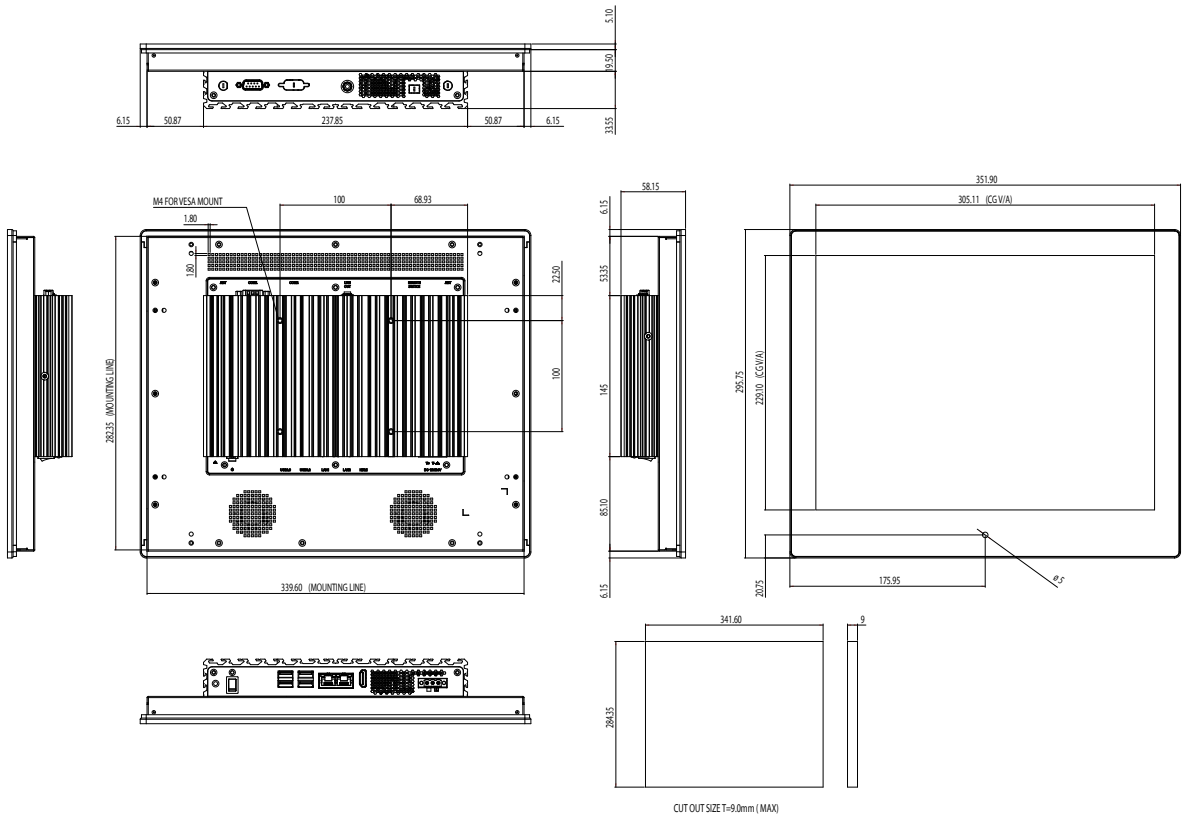
Rear Top

Rear Bottom



1. Antenna hole
2. Line out
3. COM1 (RS-232/422/485)
4. Ground screw
5. Power LED
6. Power switch
7. USB 2.0 Type-A ports
8. USB 3.2 Type-A ports
9. LAN1* & LAN2
   * Both LAN ports support WOL (Wake-on-LAN), but PXE (Preboot Execution Environment) is supported on LAN1 only.
10. HDMI® 2.0b (up to 3840x2160@60Hz)
11. 12V/24V DC input

Mechanical Dimensions



Chapter 2: Jumpers and Connectors

This chapter describes how to set the jumpers and connectors on the HPPC 12&15-10X Series motherboard.

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:

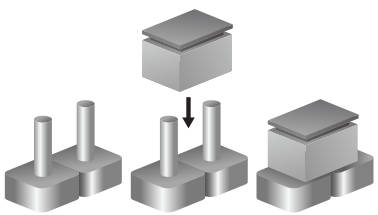
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal 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

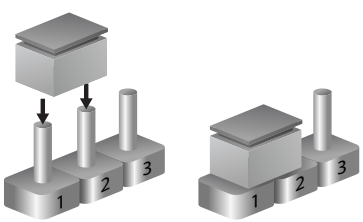
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just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

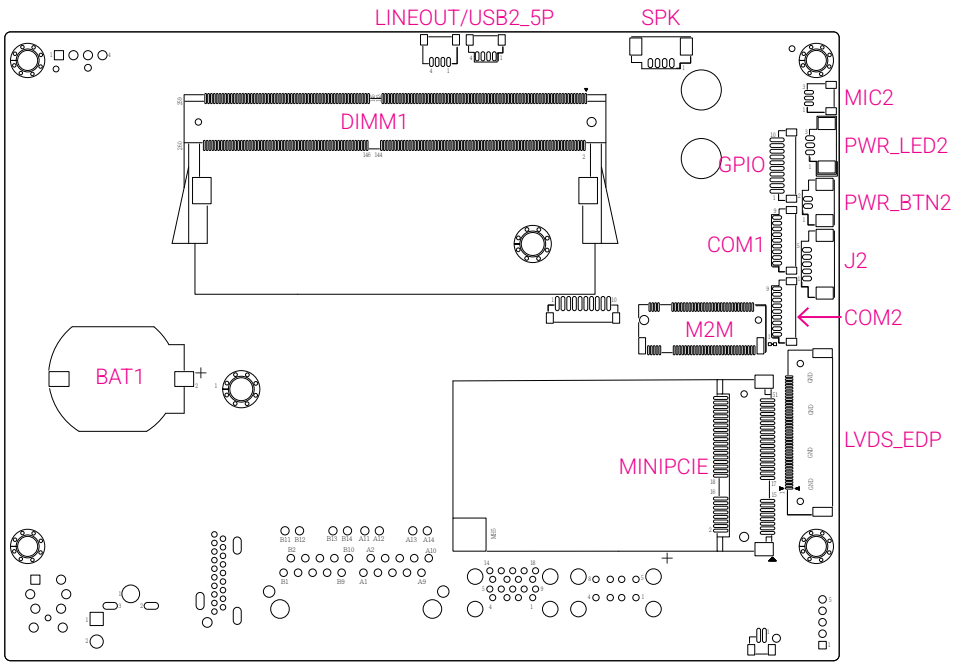


System Main Motherboard Overview

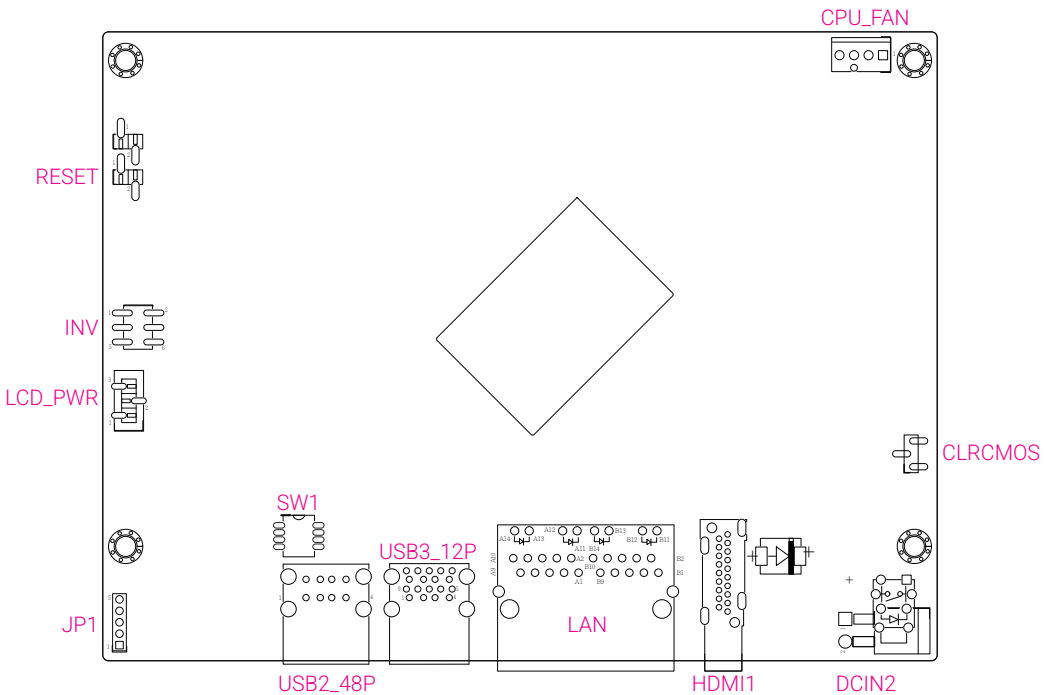
This chapter outlines the location and pin assignments of jumpers and connectors, with reference illustrations (not to scale) and pink-marked pin definitions to aid understanding.

Location of Jumpers and Connectors on the Main Motherboard

Top View



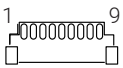
Bottom View



External I/O Interfaces

COM Port

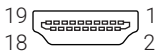
Connector location: COM1



Pin	RS-232	RS-422	RS-485
1	RI#	NC	NC
2	CTS#	NC	NC
3	RTS#	NC	NC
4	DSR#	NC	NC
5	GND	NC	NC
6	DTR#	RX-	NC
7	TXD	RX+	NC
8	RXD	TX+	D+
9	DCD	TX-	D-

HDMI®

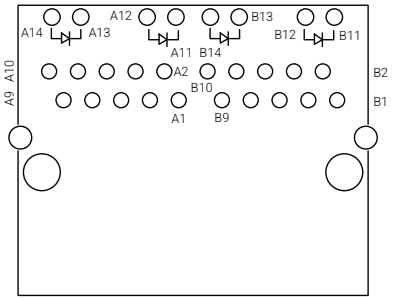
Connector location: HDMI1

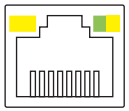


Pin	Definition	Pin	Definition
1	HDMI_TX2P	2	GND
3	HDMI_TX2N	4	HDMI_TX1P
5	GND	6	HDMI_TX1N
7	HDMI_TX0P	8	GND
9	HDMI_TX0N	10	HDMI_CLK_P
11	GND	12	HDMI_CLK_N
13	NC	14	NC
15	HDMI_SCL	16	HDMI_SDA
17	GND	18	HDMI_P5V
19	HDMI_HPD		

LAN Ports

Connector location: LAN





Act. (Left)	Status
Blinking yellow	Data activity
Off	No activity

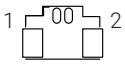
Link (Right)	Status
Steady green	2.5G/1G network link
Steady yellow	100/10Mbps network link
Off	No network link

Pin	Definition	Pin	Definition
A1	LAN1_MDI0P	A2	LAN1_MDI0N
A3	LAN1_MDI1P	A4	LAN1_MDI2P
A5	LAN1_MDI2N	A6	LAN1_MDI1N
A7	LAN1_MDI3P	A8	LAN1_MDI3N
A9	LAN1_TCT	A10	GND
A11	LAN1_LED_1000#	A12	LAN1_LED_100#
A13	LAN1_LED_ACT#	A14	LAN1_LED_ACTP

Pin	Definition	Pin	Definition
B1	LAN2_MDI0P	B2	LAN2_MDI0N
B3	LAN2_MDI1P	B4	LAN2_MDI2P
B5	LAN2_MDI2N	B6	LAN2_MDI1N
B7	LAN2_MDI3P	B8	LAN2_MDI3N
B9	LAN2_TCT	B10	GND
B11	LAN2_LED_1000#	B12	LAN2_LED_100#
B13	LAN2_LED_ACT#	B14	LAN2_LED_ACTP

System Power button

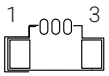
Connector location: PWR_BTN2



Pin	Definition
1	GND
2	PWRBTN#

System Power LED

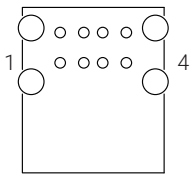
Connector location: PWR_LED2



Pin	Definition
1	PWRLED_P
2	NC
3	PWRLED_N

USB 2.0 Ports

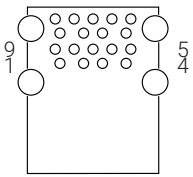
Connector location: USB2_48P



Pin	Definition	Pin	Definition
1	+5V	2	USB2_1N
3	USB2_1P	4	GND
5	+5V	6	USB2_2N
7	USB2_2P	8	GND

USB 3.2 Ports

Connector location: USB3_12P

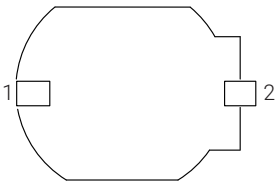


Pin	Definition	Pin	Definition
1	+5V	2	USB2_1N
3	USB2_1P	4	GND
5	USB3_RX1N	6	USB3_RX1P
7	GND	8	USB3_TX1N
9	USB3_TX1P	10	+5V
11	USB2_2N	12	USB2_2P
13	GND	14	USB3_RX2N
15	USB3_RX2P	16	GND
17	USB3_TX2N	18	USB3_TX2P

Internal I/O Interfaces

Battery Connector

Connector location: BAT1



Pin	Definition
1	GND
2	BAT

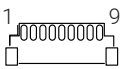
Clear CMOS

Connector location: CLRCMOS

Pin	Settings
1-2	Normal (default)
2-3	Clear CMOS

COM Port

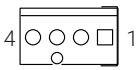
Connector location: COM2



Pin	RS-232	RS-422	RS-485
1	RI#	NC	NC
2	CTS#	NC	NC
3	RTS#	NC	NC
4	DSR#	NC	NC
5	GND	NC	NC
6	DTR#	RX-	NC
7	TXD	RX+	NC
8	RXD	TX+	D+
9	DCD	TX-	D-

CPU Fan

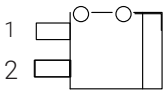
Connector location: CPU_FAN



Pin	Definition
1	GND
2	+12V
3	CPU FAN SPEED DETECT
4	CPU FAN SPEED CONTROL

DC Power Input

Connector location: DCIN2



Pin	Definition
1	GND
2	DCIN

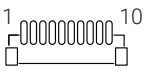
80 Debug Port

Connector location: DEBUG

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

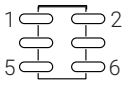
Connector location: GPIO



Pin	Definition
1	+5V
2	GND
3	GPO0
4	GPO1
5	GPO2
6	GPO3
7	GPI0
8	GPI1
9	GPI2
10	GPI3

LCD Panel Backlight Converter Control

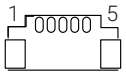
Connector location: INV



Pin	Definition	Pin	Definition
1	GND	2	GND
3	+V_INV	4	+V_INV
5	INV_BKLTEN	6	INV_BKLTCTRL

Light Sensor Connector

Connector location: J2



Pin	Definition
1	3.3V
2	3.3V
3	COM2_TXD
4	COM2_RXD
5	GND

COM2 RI Select

Connector location: JP1

Pin	Settings
1-2	COM2 RI = Ring (default)
2-3	COM2 RI = +5V
4-5	COM2 RI = +12V

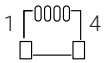
LCD Panel Voltage Select

Connector location: LCD_PWR

Pin	Settings
1-2	+3.3V (default)
2-3	+5V

Line Out

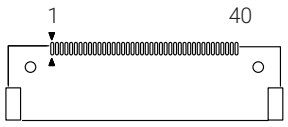
Connector location: LINEOUT



Pin	Definition
1	LOUT_R
2	LOUT-JD
3	GND
4	LOUT-L

LVDS/eDP Panel Connector

Connector location: LVDS_EDP1



Pin	Definition	Pin	Definition
1	LVDS_DAT3P	21	GND
2	LVDS_DAT3N	22	+V_PANEL
3	LVDS_DAT2P	23	GND
4	LVDS_DAT2N	24	GND
5	LVDS_DAT1P	25	GND
6	LVDS_DAT1N	26	LVDS_CLK1P
7	LVDS_DAT0P	27	LVDS_CLK1N
8	LVDS_DAT0N	28	GND
9	LVDS_DAT7P	29	GND
10	LVDS_DAT7N	30	GND
11	LVDS_DAT6P	31	Hot-Plug Detect
12	LVDS_DAT6N	32	INV_BKLTEN
13	LVDS_DAT5P	33	INV_BKLTCTRL
14	LVDS_DAT5N	34	LVDS_CLK2P
15	LVDS_DAT4P	35	LVDS_CLK2N
16	LVDS_DAT4N	36	+V_INV
17	GND	37	+V_INV
18	+V_PANEL	38	+V_INV
19	+V_PANEL	39	+V_INV
20	+V_PANEL	40	N.C.

Pin	Definition	Pin	Definition
1	N.C.	21	GND
2	N.C.	22	+V_PANEL
3	EDP_TX0P	23	GND
4	EDP_TX0N	24	GND
5	EDP_TX1P	25	GND
6	EDP_TX1N	26	EDP_AUXP
7	EDP_HPD	27	EDP_AUXN
8	N.C.	28	GND
9	N.C.	29	GND
10	N.C.	30	GND
11	N.C.	31	Hot-Plug Detect
12	N.C.	32	INV_BKLTEN
13	N.C.	33	INV_BKLTCTRL
14	N.C.	34	N.C.
15	N.C.	35	N.C.
16	N.C.	36	+V_INV
17	GND	37	+V_INV
18	+V_PANEL	38	+V_INV
19	+V_PANEL	39	+V_INV
20	+V_PANEL	40	GND

M.2 Key M

Connector location: M2M1

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
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

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

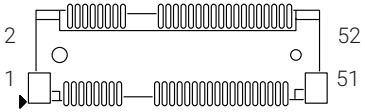
Mic In

Connector location: MIC1

Pin	Definition
1	AGND
2	MIC_JD
3	MIC_L

Mini PCIe

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
19	NC	20	W_DIS#
21	GND	22	RESET#
23	PCIE5_RXN / SATA_RXP	24	3.3V

Pin	Definition	Pin	Definition
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
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

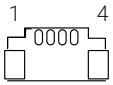
System Reset

Connector location: RESET

Pin	Definition
1	RESET#
2	GND

Speaker

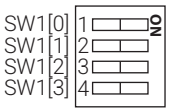
Connector location: SPK



Pin	Definition
1	R_OUT-
2	R_OUT+
3	L_OUT-
4	L_OUT+

LVDS Resolution Select

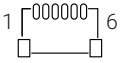
Connector location: SW1



GPIO[3:0]	SW1[3]	SW1[2]	SW1[1]	SW1[0]	HA	VA	CD(bit)	Port
0000	ON	ON	ON	ON	800	600	6	single
0001	ON	ON	ON	OFF	1024	768	6	single
0010	ON	ON	OFF	ON	1024	768	8	single
0011	ON	ON	OFF	OFF	1280	1024	6	single
0100	ON	OFF	ON	ON	1280	800	6	single
0101	ON	OFF	ON	OFF	1280	800	8	single
0110	ON	OFF	OFF	ON	1280	1024	8	dual
0111	ON	OFF	OFF	OFF	1366	768	6	single
1000	OFF	ON	ON	ON	1366	768	8	single
1001	OFF	ON	ON	OFF	1440	900	8	dual
1010	OFF	ON	OFF	ON	1400	1050	8	dual
1011	OFF	ON	OFF	OFF	1600	900	8	dual
1100	OFF	OFF	ON	ON	1680	1050	8	dual
1101	OFF	OFF	ON	OFF	1600	1200	8	dual
1110	OFF	OFF	OFF	ON	1920	1080	8	dual
1111	OFF	OFF	OFF	OFF	eDP mode			

USB 2.0

Connector location: USB2_3P



Pin	Definition
1	GND
2	USB_N
3	USB_P
4	NC
5	NC
6	5VSB

USB 2.0

Connector location: USB2_5P

Pin	Definition
1	GND
2	USB_N
3	USB_P
4	5VSB

Chapter 3: System Setup

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

Note that the descriptions in this chapter are based on a 12" model; however, the system setup for the 15" model remains the same.

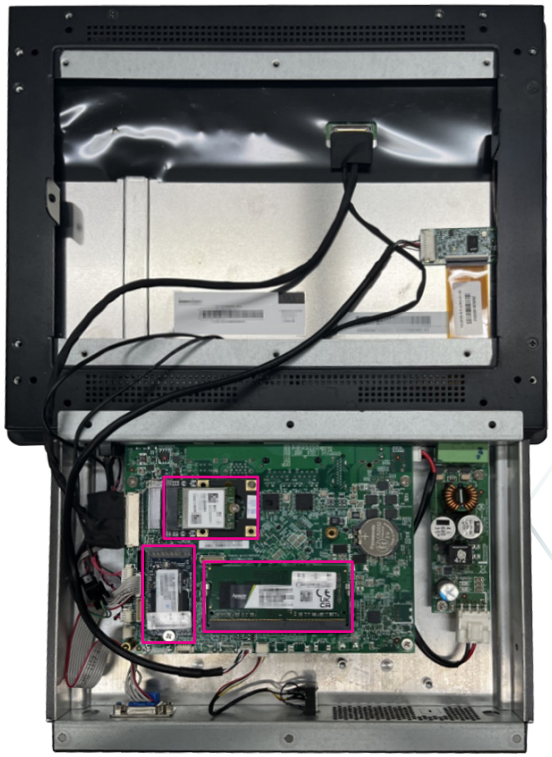
Removing the Top Cover from the Chassis

Refer to the image on the right to loosen the screws. Six screws are located on the rear panel, and each of the left and right side panels has one screw.

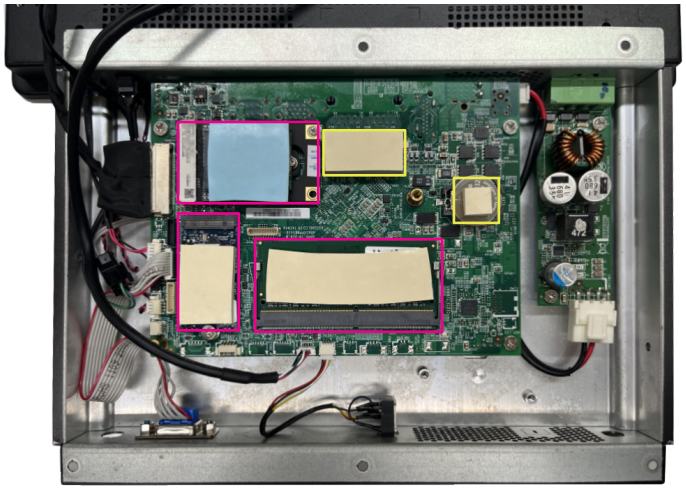
Installing Peripheral Modules

1. Follow the previous section to loosen the screws, then gently flip open the chassis, which should appear as shown in the image below.

2. Install the memory or M.2 modules carefully, as needed.

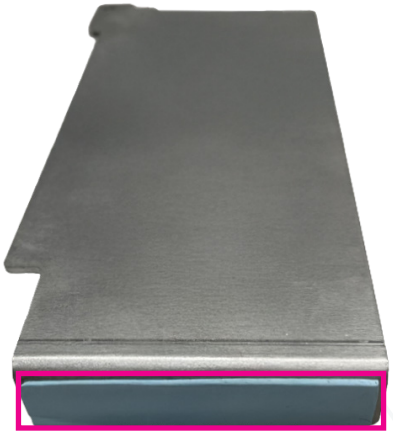


3. Once the installation is complete, peel off one side of the protective film from the thermal pad and attach it to the corresponding module according to its size. Then peel off the other side of the film after the thermal pad is firmly affixed to the module.

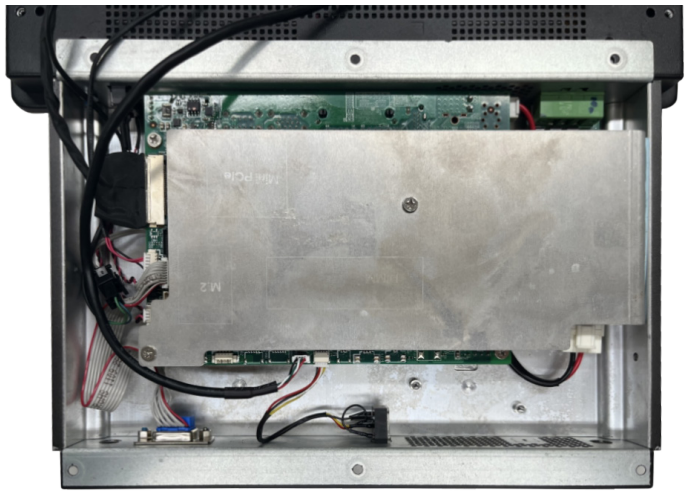


In addition to the thermal pads for the modules (highlighted in magenta in the image above), two additional thermal pads are used for the motherboard chipset and the battery, highlighted in yellow.

4. Peel off the protective film from the thermal pad and attach it to the memory cover side panel. Then peel off the other side of the film after the thermal pad is firmly affixed to the memory cover.



5. Refer to the image below to assemble the memory cover and secure it with screws.



6. Once the memory cover is installed, reinstall the chassis in reverse order as described in Step 1, and secure it with screws.

Chapter 4: BIOS Setup

This chapter describes how to use the BIOS setup program for HPPC 12&15-10X Series. 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.

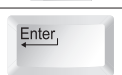
Scrolls backward through the values or options of the highlighted field.

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

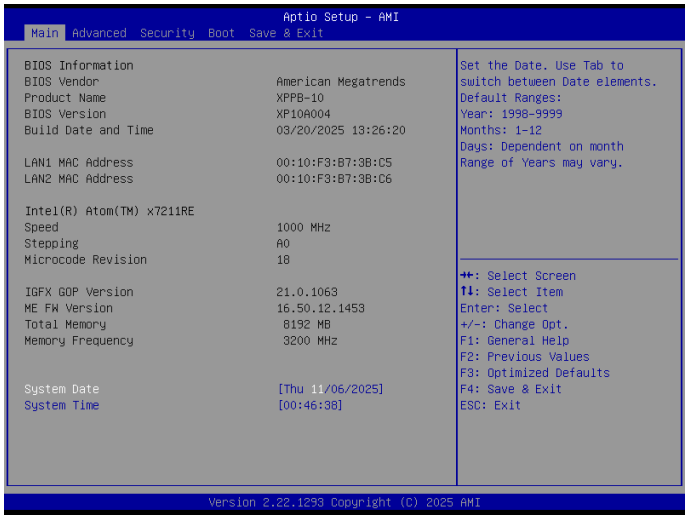
When "▶" appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press Enter.

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.



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.

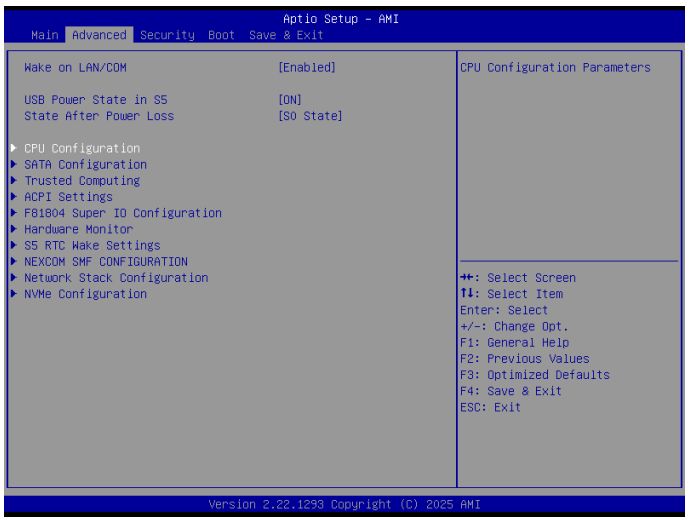
System Time

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.

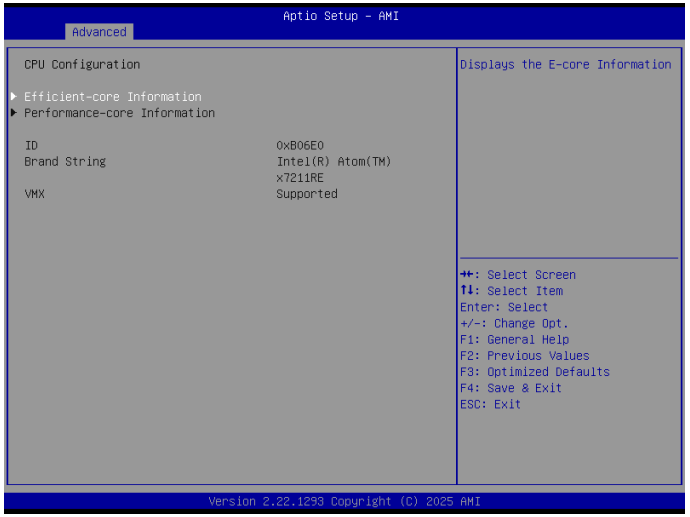


Wake on LAN/COM
Enable or disable the LAN/COM to wake up the system.

USB Power State in S5
Configure the USB power state in S5.

State After Power Loss
Define the system state after power restoration.

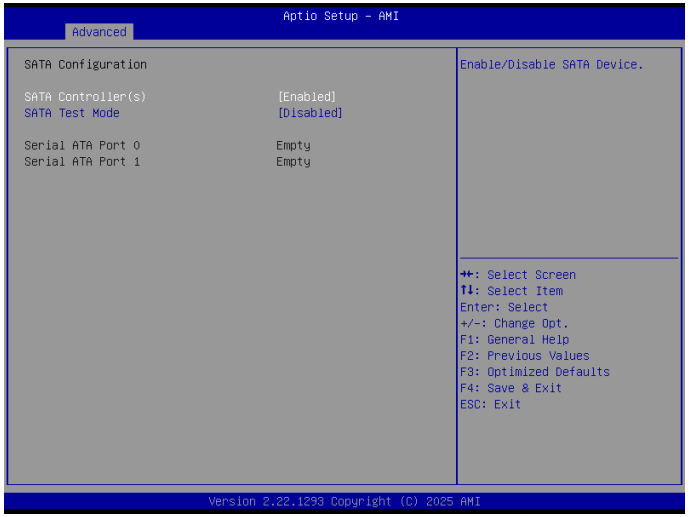
CPU Configuration



Efficient-core Information
Display the E-core information.

Performance-core Information
Display the P-core information.

SATA Configuration



SATA Controller(s)
Enable or disable SATA device.

SATA Test Mode
Enable or disable SATA test mode.

Trusted Computing

Security Device Support
Enable or disable BIOS support for security device. O.S will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

SHA256 PCR Bank
Enable or disable SHA256 PCR Bank.

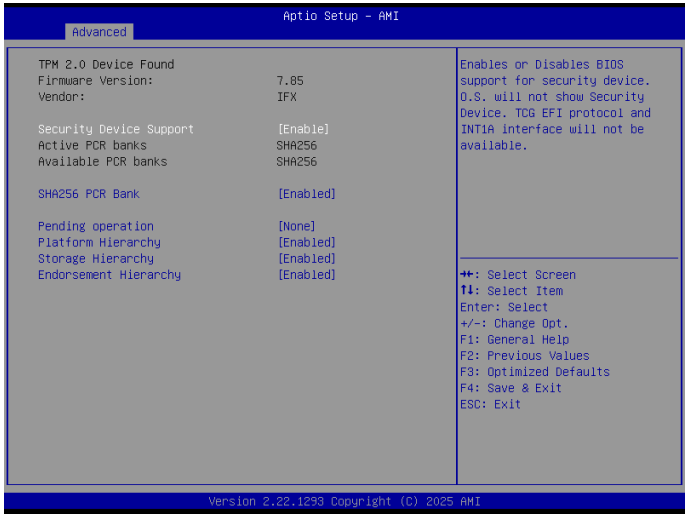
Pending operation
Schedule an operation for the security device.

Platform Hierarchy
Enable or disable platform hierarchy.

Storage Hierarchy
Enable or disable storage hierarchy.

Endorsement Hierarchy
Enable or disable endorsement hierarchy.

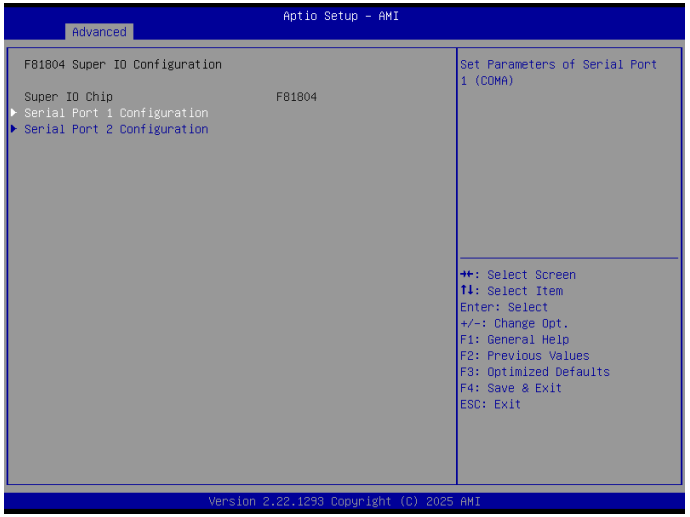
ACPI Settings



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

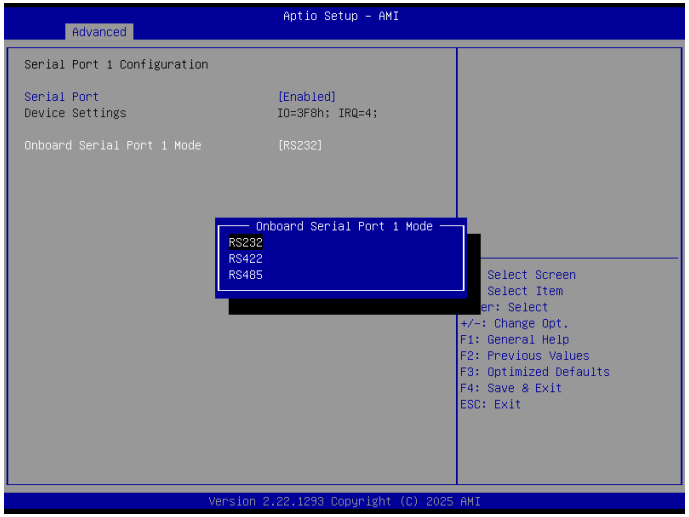
ACPI Sleep State
Select the highest ACPI sleep state the system will enter when the suspend button is pressed.

F81804 Super IO Configuration



Serial Port 1/2 Configuration
Press <Enter> to open the submenu.

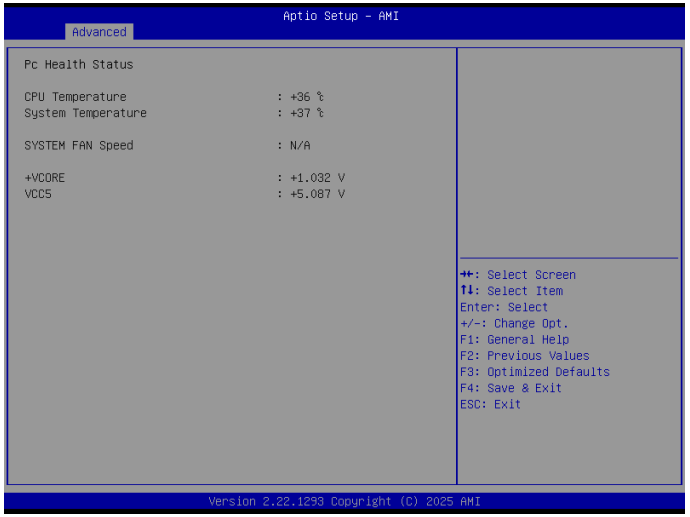
F81804 Super IO Configuration > Serial Port 1/2 Configuration



Serial Port
Enable or disable the serial port.

Onboard Serial Port 1 Mode
Configure the serial port mode to RS-232, RS-422, or RS-485.

Hardware Monitor

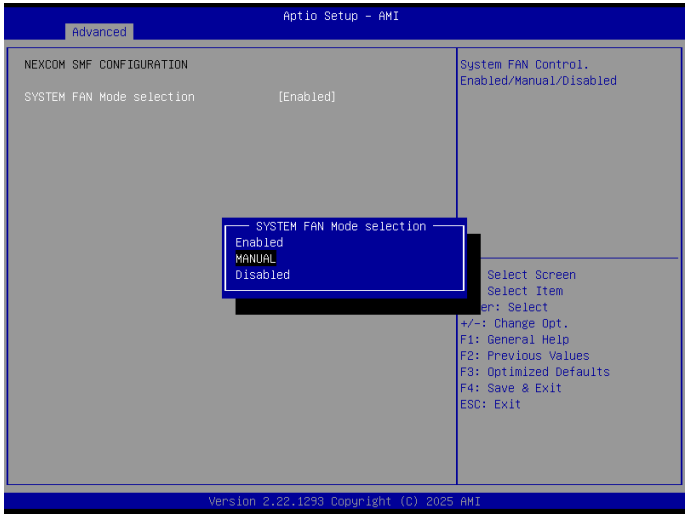


This section is used to monitor hardware status such as temperature, fan speed, and voltages.

S5 RTC Wake Settings

Wake system from S5
Enable or disable system wake on alarm event. Select Fixed Time, system will wake on the hr::min::sec specified. Select Dynamic Time, system will wake on the current time + increase minute(s).

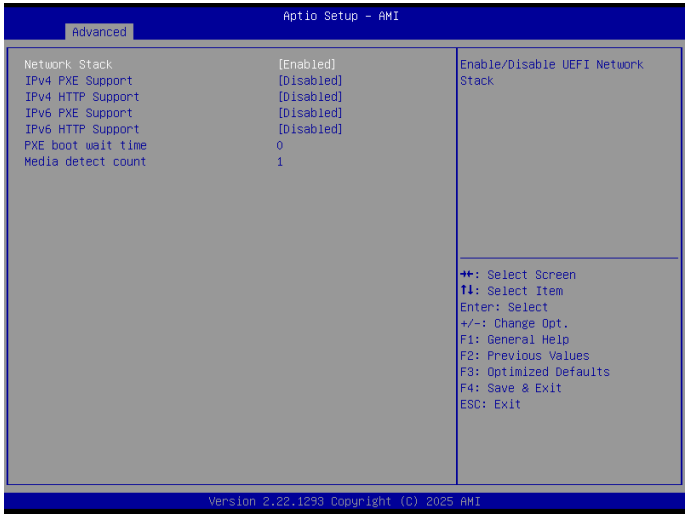
NEXCOM SMF Configuration



System Fan Mode Selection
Enable or disable system fan mode. Fan speed can be configured when the Manual option is selected.

Speed
Configure the fan1 speed value.

Network Stack Configuration



Network Stack
Enable or disable UEFI network stack.

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.

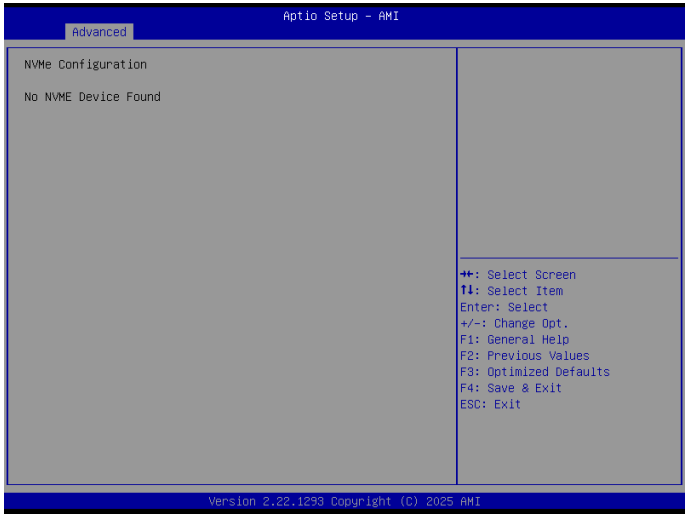
IPv6 PXE Support
Enables or disables IPv6 PXE support. If disabled, the IPv6 boot option will not be created.

IPv6 HTTP Support
Enable or disable IPv6 HTTP support.

PXE boot wait time
Configure the wait time to press the ESC key to abort the PXE boot.

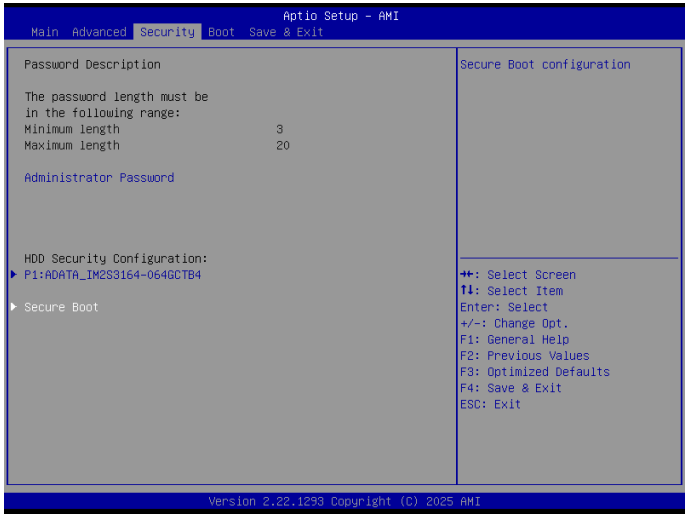
Media detect count
Configure the number of times the media will be checked.

NVMe Configuration



Display details of the NVMe device when connected, or **No NVMe device found** if absent.

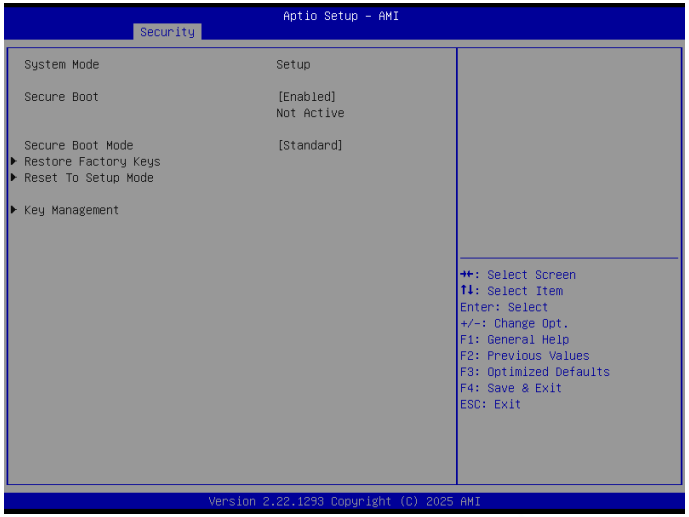
Security



Administrator Password
Set administrator's password.

Secure Boot
Press <Enter> to open the submenu.

Secure Boot



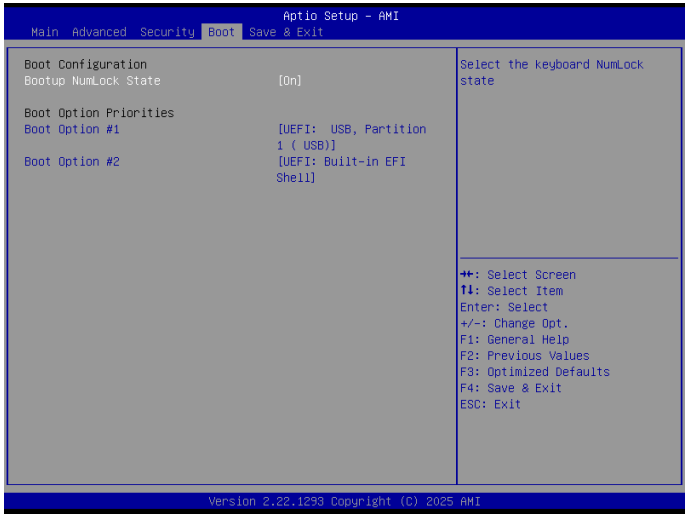
Secure Boot Mode
Select a secure boot mode for the system. More options are available if the option is set to Custom.

Restore Factory Keys
Allow you to install factory default secure boot key databases.

Reset To Setup Mode
Delete all secure boot key databases from NVRAM.

Key Management
Enable experienced users to modify secure boot variables.

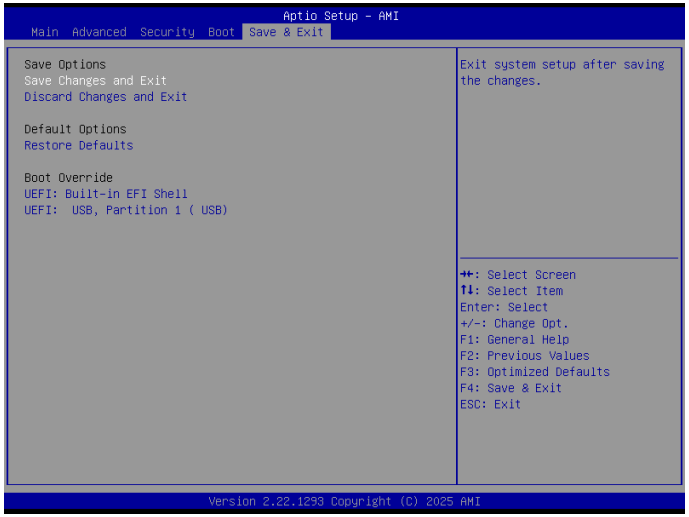
Boot



Bootup NumLock State
Select the keyboard NumLock state.

Boot Option #1 to Boot Option #X
Adjust the boot sequence of the system. Boot Option #1 is the first boot device that the system will boot from, next will be Boot Option #2 and so forth. X represents the boot option number, and it may vary depending on the system.

Save & Exit



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>.