NEXCOM International Co., Ltd.

Intelligent Platform & Services Business Unit
Wide Screen Touch Computer
XPPC 22-100
User Manual

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PREFACE

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Acknowledgements

XPPC 22-100 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. **ATTENTION:** Risque d'explosion si la batterie est remplacée par un type incorrect. Mettre au rebus les batteries usagées selon les instructions.

    CAUTION: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the 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

Headquarters
NEXCOM International Co., Ltd.

9F, No. 920, Chung-Cheng Rd.,
ZhongHe District, New Taipei City, 23586,
Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7782
www.nexcom.com

Asia

Taiwan
NexAIoT Co., Ltd.
Taipei Office

13F, No.920, Chung-Cheng Rd.,
ZhongHe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7796
Fax: +886-2-8226-7792
Email: sales@nexcom.com.tw
www.nexcom.com.tw

NexAIoT Co., Ltd.
Taichung Office

16F, No.250, Sec. 2, Chongde Rd.,
Beitun Dist.,
Taichung City 406, R.O.C.
Tel: +886-4-2249-1179
Fax: +886-4-2249-1172
Email: sales@nexcom.com.tw
www.nexcom.com.tw

NexCOBOT Taiwan Co., Ltd.

13F, No.916, Chung-Cheng Rd.,
ZhongHe District,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7796
Fax: +886-2-8226-7792
Email: sales@nexcom.com.tw
www.nexcom.com.tw

GreenBase Technology Corp.

13F, No.922,Chung-Cheng Rd.,
Zhonghe Dist.,
New Taipei City, 23586, Taiwan, R.O.C.
Tel: +886-2-8226-7786
Fax: +886-2-8226-7900
Email:sales@nexcom.com.tw
www.nexcom.com.tw

China
NEXSEC Incorporated

Floor 5, No.4, No.7 fengxian middle Rd.,
(Beike Industrial Park), Haidian District,
Beijing, 100094, China
Tel: +86-10-5704-2680
Fax: +86-10-5704-2681
Email: sales@nexcom.cn
www.nexcom.cn

NEXCOM Shanghai

Room 603/604, Huiyinmingzun Plaza Bldg., 1,
No. 609, Yunlin East Rd.,
Shanghai, 200062, China
Tel: +86-21-5278-5868
Fax: +86-21-3251-6358
Email: sales@nexcom.cn
www.nexcom.cn

NEXCOM Surveillance Technology Corp.

Floor 5, Building C, ZhenHan Industrial Zone,
GanKeng Community, Buji Street,
LongGang District,
ShenZhen, 518112, China
Tel: +86-755-8364-7768
Fax: +86-755-8364-7738
Email: steveyang@nexcom.com.tw
www.nexcom.cn

NEXCOM United System Service

Room 603/604, Huiyinmingzun Plaza Bldg. 1,
No. 609, Yunlin East Rd.,
Shanghai, 200062, China
Tel: +86-21-5278-5868
Fax: +86-21-3251-6358
Email: renwang@nexcom.com.tw
www.nexcom.cn

NEXGOL

1st Floor, Building B4, Electronic 2nd Area,
(Phoenix Lake Industrial Park), Yongchuan Dist.,
Chongqing City, 402160, China
Tel: +86-23-4960-9080
Fax: +86-23-4966-5855
Email: sales@nexcobot.com
www.nexgol.com/NexGoL

Beijing NexGemo Technology Co.,Ltd.

5th Floor, Gemotech Building, No.1, Development Rd.,
Changping International Information Industry Base,
Changping District,
Beijing,102206, China
Tel: +86-10-8190-9399
Fax:+86-10-8190-9456

Japan
NEXCOM Japan

9F, Tamachi Hara Bldg.,
4-11-5, Shiba Minato-ku,
Tokyo, 108-0014, Japan
Tel: +81-3-5419-7830
Fax: +81-3-5419-7832
Email: sales@nexcom-jp.com
www.nexcom-jp.com

Europe
United Kingdom
NEXCOM EUROPE

10 Vincent Avenue,
Crownhill Business Centre,
Milton Keynes, Buckinghamshire
MK8 0AB, United Kingdom
Tel: +44-1908-267121
Fax: +44-1908-262042
Email: sales.uk@nexcom.eu
www.nexcom.eu

America
USA
NEXCOM USA

46665 Fremont Blvd.,
Fremont CA 94538, USA
Tel: +1-510-656-2248
Fax: +1-510-656-2158
Email: sales@nexcom.com
www.nexcomusa.com

Package Contents

Before continuing, verify that the XPPC 22-100 package that you received is complete. Your package should have all the items listed in the following table.

Item	Part Number	Name	Qty
1	10W30XPPC10X0	XPPC22-100 System	1
2	7400090003X00	90W Power Adapter	1

Optional Accessories 1

Item	Part Number	Name	Description	Qty
1	5061711301X00	Panel Mount Bracket	Panel Mount BKT for XPPC24-100 Sin Super Circle 30x20x6mm SECC T=1.6mm	14
2	6012200030X00	Bubble Wrap	Double Layers Antistaic Air Bag 鴻瑞 11x(19+24)CM	1

Optional Accessories 2

Item	Part Number	Name	Description	Qty
1	5040420229X00	Open Frame Bracket	(N)Open Frame Bracket For XPPC22-100 Ver:A SHYUNG SHUHN 270x41.80x21.45mm SPCC NI	2
2	50311F0326X00	Screw	Flat Head Screw Long Fei:F3x5 Nylok NI+Heat Treatment F3x5 Nylok NI+Heat Treatment	8
3	6012200053X00	Zipper Bag	PE Zipper Bag #3 炎洲:印刷由任袋3號 100x70mm,W/China RoHS Symbol	1
4	6012200188X00	Bubble Wrap	Antistaic Air Bag For Chimera 15P6 Ver:A FULPAK (330+330)x450mm Color:Red	1

Ordering Information

The following below provides ordering information for XPPC 22-100.

XPPC22-100 (P/N: 10W30XPPC10X0)
21.5" FHD LED multi-touch computer, Intel® Celeron® J3455

Panel Mount Kit (P/N: 88W30XPPC07X0)

Open Frame Kit (P/N: 88W30XPPC08X0)

Thermal Kit (P/N: 88W30XPPC09X0)

CHAPTER 1: PRODUCT INTRODUCTION

XPPC 22-100

Overview
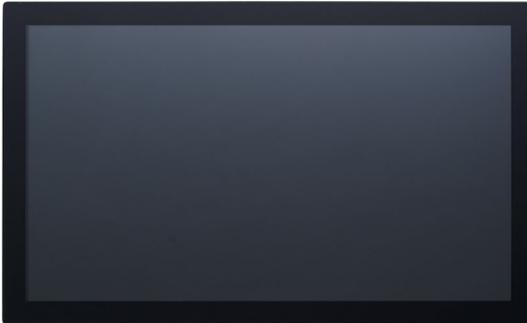
Key Features

- 21.5" TFT FHD 16:9 panel

- 10 Points P-Cap multi-touch with slim bezel design

- IP65 protection on the front

- Support: VESA/Panel/Openframe Mount

- Intel® Celeron® processor J3455, Quad Core, 1.50 GHz

- 1 x DDR3L up to 8GB, M.2 2242 Key M for storage device

- Support power input 19 VDC

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Hardware Specifications

Panel

- LCD size: Innolux G-series 21.5", 16:9
- Resolution: Full HD 1920 x 1080
- Luminance
  - LCD panel: 500cd/m^2
  - XPPC PCAP touch: 400cd/m^2
- Contrast ratio: 1000
- LCD color: 16.7M
- Viewing angle: 89 (U), 89 (D), 89 (L), 89 (R)

Touch Screen

- 10 points P-Cap (projected capacitive touch)
- Glass surface treatment: AS (Anti-Smudge Coating for easy cleaning)

System

- CPU: onboard Intel® Celeron® processor J3455, 1.50GHz, 2M cache
- Graphic: Intel® HD graphics

Main Memory

- 1 x SO-DIMM socket support up to 8GB DDR3L 1866 MHz, non-ECC and un-buffered memory

Storage Device

- 1 x M.2 M key 2242 SSD (support SATA 3.0)

Expansion

- 1 x mini-PCIe full-size connector with SIM slot (full-size) onboard, support Wi-Fi/LTE module

Rear I/O

- 1 x COM1: RS232/422/485
- 1 x 19V DC-in power jack lock type
- 2 x RJ45 with LEDs for Gigabit LAN
- 1 x HDMI 2.0, resolution 4096 x 2160 60Hz
- 2 x USB 3.0
- 1 x Line-out
- LED for power on/off
- Power switch

Front I/O

- 2 x Antenna holes

Mechanical

- Color/material: black silver/metal sheet
- Support
  - VESA mount 100mm x 100mm
  - Panel mount
  - Open frame

Environment

- Vibration
  - IEC 68 2-64
  - 2Grms @ sine, 5~500Hz, 1hr/axis
  - 2.2Grms @ random condition, 5~500Hz, 0.5hr/axis (non-operating)
- Shock
  - IEC 68 2-27
  - 50g peak acceleration (11 msec. duration)
- Temperature

- – Operating temperature: 0°C~45°C (optional to 50°C)
- – Storage temperature: -20°C~60°C
- ▪ Operating humidity: 10%~90% relative humidity, non-condensing limits to be at 90%

Dimensions

- ▪ System: 520.6mm x 315.6mm x 54mm
- ▪ System weight: 5.0kg
- ▪ Package: 650mm x 480mm x 170mm
- ▪ Package weight: 7.5kg

Power Supply

- ▪ 1 x External 90W AC/DC power adapter with lock (power adapter is included in accessory)
- ▪ Input: 100VAC to 240VAC
- ▪ Output: DC+19VD

Certification

- ▪ CE (EN55035 + EN55032)
- ▪ FCC Class A (EMI part 15B)
- ▪ LVD (EN62368-1)

Operating System Support

- ▪ Windows 10 64-bit
- ▪ Linux 4.1

Knowing Your XPPC 22-100

Rear Top
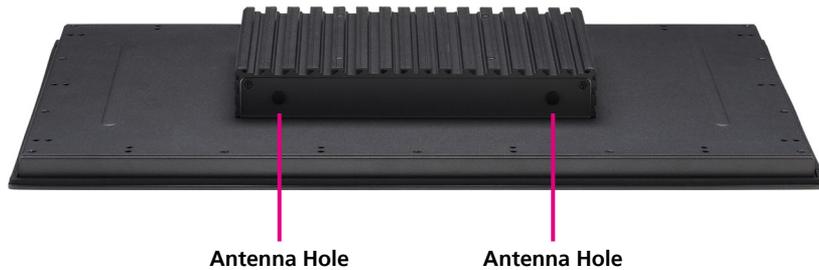
Antenna Hole   Antenna Hole

Rear Bottom

Power   Power   LAN1 & LAN2   HDMI
LED   Switch
       DC Input   USB 3.0
              COM   Line-out
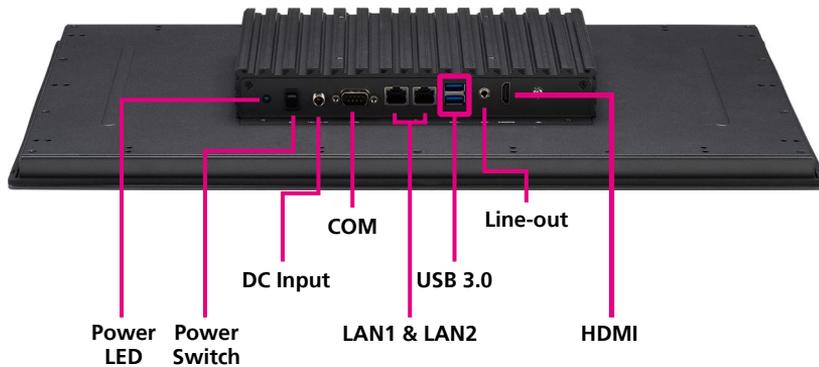
Antenna Holes

The external antenna mounting holes are used to mount and connect optional Wi-Fi antennas.

Power LED

Used to indicate the power status of the system.

Power Switch

Press to power-on or power-off the system.

19V DC Input

Used to plug a DC power cord.

COM

DB9 port used to connect RS232/422/485 compatible devices.

LAN1 & LAN2 (RJ45 with LEDs)

Used to connect the system to a local area network.

USB 3.0

Used to connect USB 3.0/2.0 devices.

Line-out

Used to connect a headphone or a speaker.

HDMI

Used to connect an HDMI interface monitor.

Mechanical Dimensions

CUT OUT SIZE T=9.50mm (MAX)
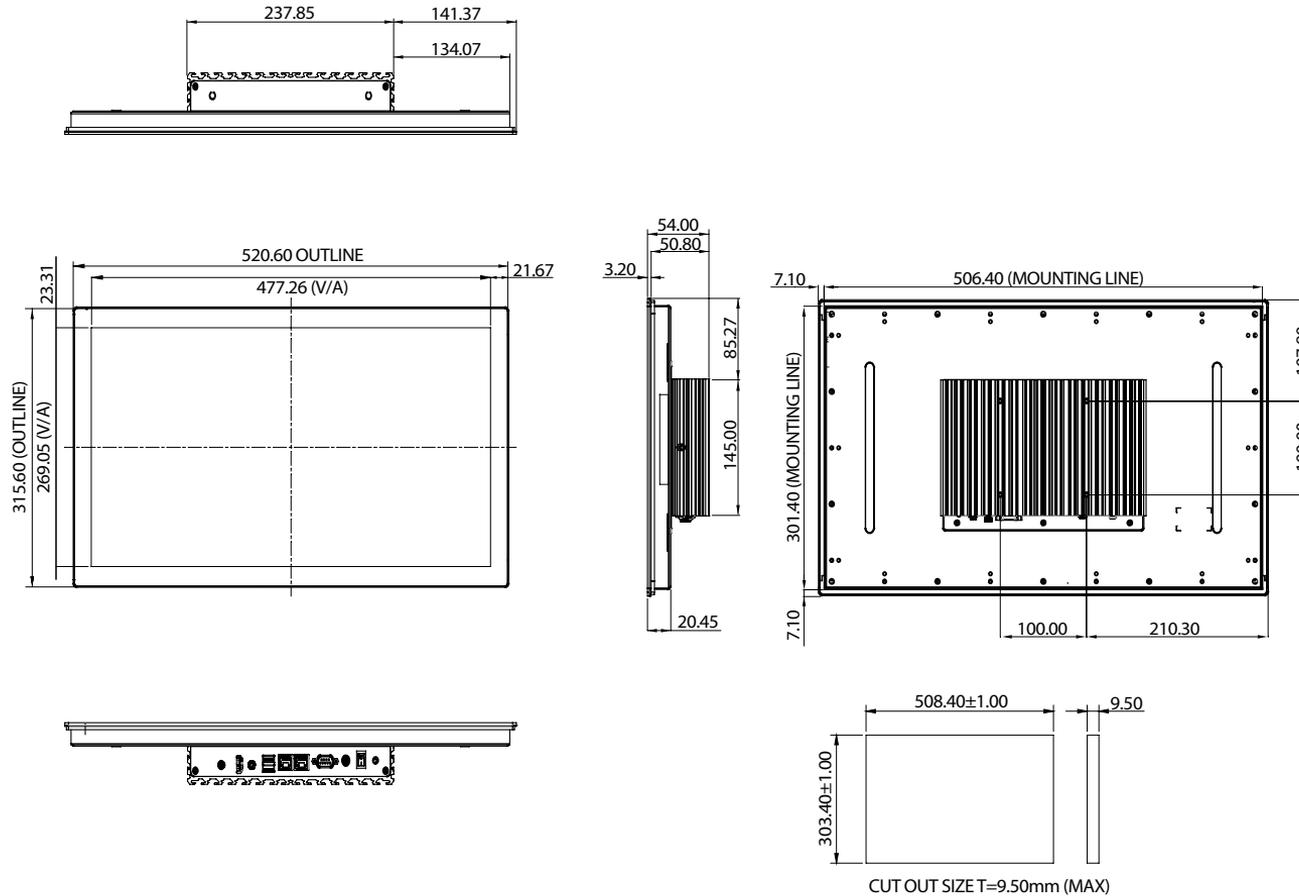
CHAPTER 2: JUMPERS AND CONNECTORS

This chapter describes how to set the jumpers and connectors on the XPPC 22-100 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)
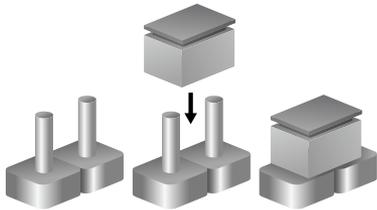
Three-Pin Jumpers: Pins 1 and 2 are Short
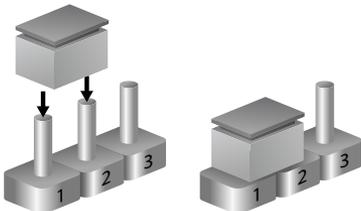
Locations of the Jumpers and Connectors for XPPC 22-100

The figure below is the top and bottom view of the mainboard used in XPPC 22-100. It shows the locations of the jumpers and connectors.

Top View
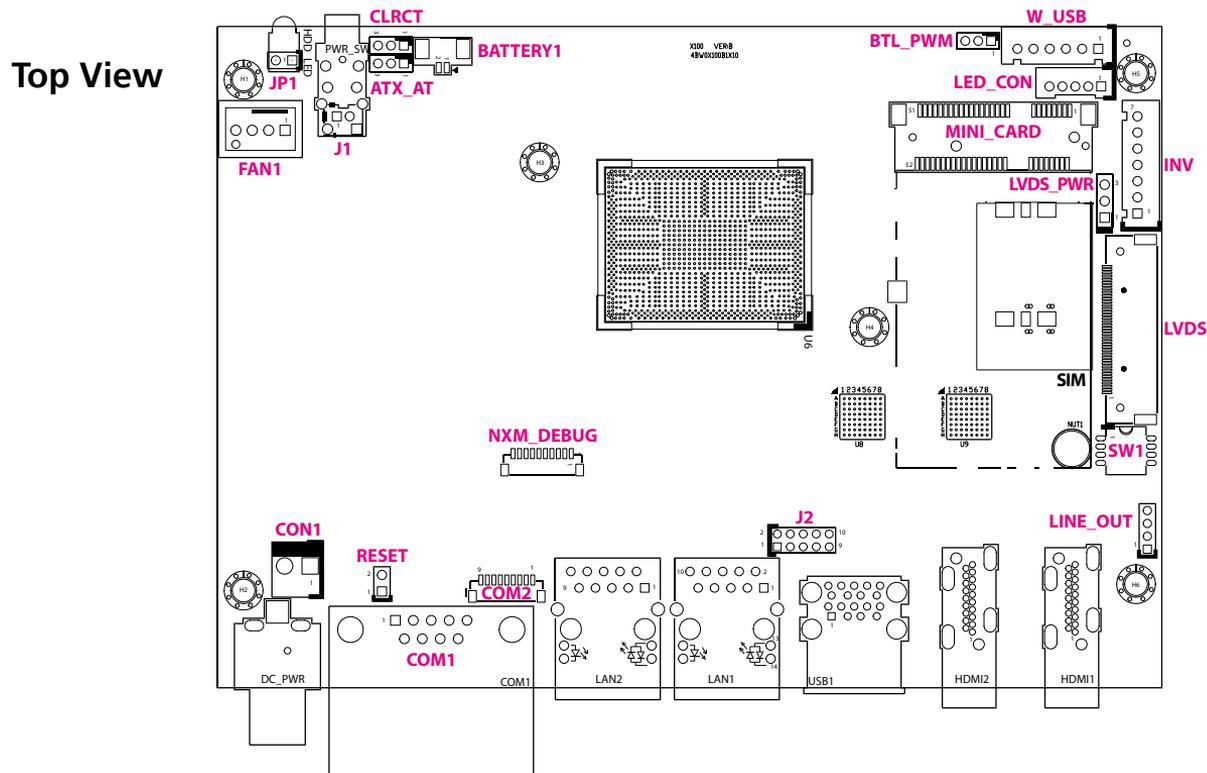
Bottom View
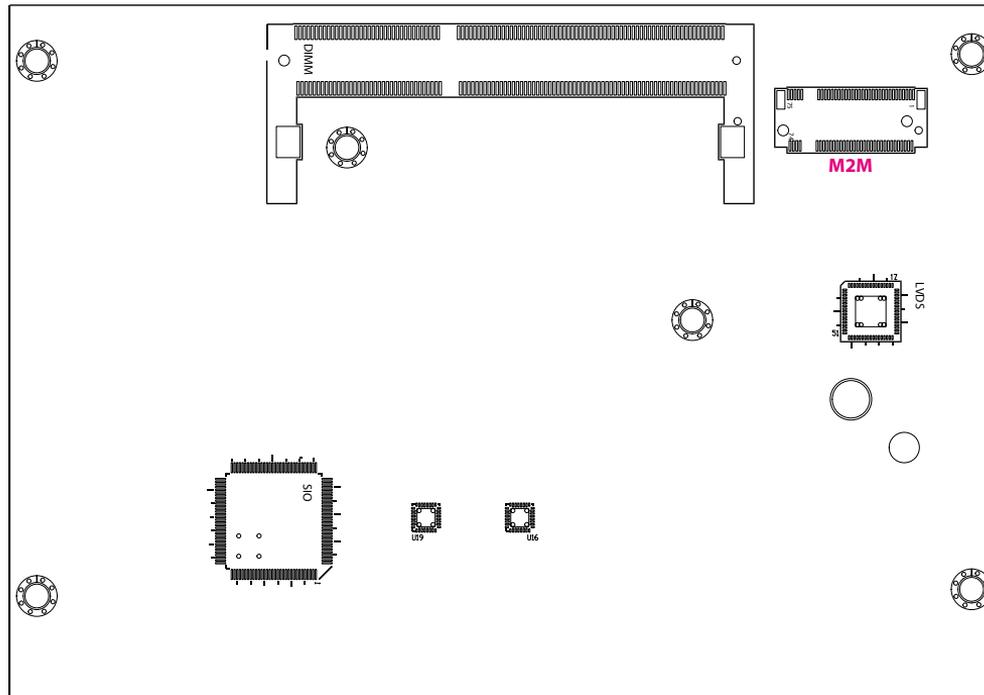
Jumpers & DIP Switches

AT/ATX Mode Select

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

1 □ ○ ○ 3
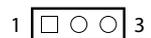
Pin	Settings
1-2 On	ATX Mode
2-3 On	AT Mode

1-2 On: default

Clear CMOS

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

1 □ ○ ○ 3
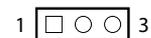
Pin	Settings
1-2 On	Normal
2-3 On	Clear CMOS

1-2 On: default

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LVDS Panel Voltage Select

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: LVDS_PWR

1 ▢ ○ ○ 3

Pin	Settings
1-2 On	3.3V
2-3 On	5V

1-2 On: default

Backlight Control Voltage Select (Dimming)

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

1 ▢ ○ ○ 3

Pin	Settings
1-2 On	3.3V
2-3 On	5V

2-3 On: default

LVDS Resolution Select

Connector type: 4-pin DIP switch
Connector location: SW1
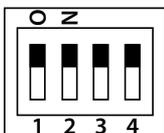
SW [3:0]	SW1 [3]	SW1 [2]	SW1 [1]	SW1 [0]	Function
0000	ON	ON	ON	ON	800 x 600 6-bit Single Port
0001	ON	ON	ON	OFF	1024 x 768 6-bit Single Port
0010	ON	ON	OFF	ON	1024 x 768 8-bit Single Port
0011	ON	ON	OFF	OFF	1280 x 1024 6-bit Single Port
0100	ON	OFF	ON	ON	1280 x 800 6-bit Single Port
0101	ON	OFF	ON	OFF	1280 x 800 8-bit Single Port
0110	ON	OFF	OFF	ON	1280 x 1024 8-bit Dual Port
0111	ON	OFF	OFF	OFF	1366 x 768 6-bit Single Port
1000	OFF	ON	ON	ON	1366 x 768 8-bit Single Port
1001	OFF	ON	ON	OFF	1440 x 900 8-bit Dual Port
1010	OFF	ON	OFF	ON	1400 x 1050 8-bit Dual Port
1011	OFF	ON	OFF	OFF	1600 x 900 8-bit Dual Port
1100	OFF	OFF	ON	ON	1680 x 1050 8-bit Dual Port
1101	OFF	OFF	ON	OFF	1600 x 1200 8-bit Dual Port
1110	OFF	OFF	OFF	ON	1920 x 1080 8-bit Dual Port
1111	OFF	OFF	OFF	OFF	1920 x 1200 8-bit Dual Port

Connector Pin Definitions

External Connector

COM1 DB9 Male Connector

Connector type: DB-9 port, 9-pin D-Sub
Connector location: COM1
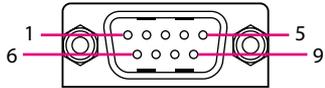
RS232		RS422		RS485	
Pin	Definition	Pin	Definition	Pin	Definition
1	DCD	1	TX-	1	TR-
2	RXD	2	TX+	2	TR+
3	TXD	3	RX+	3	
4	DTR	4	RX-	4	
5	GND	5		5	
6	DSR	6		6	
7	RTS	7		7	
8	CTS	8		8	
9	RI	9		9	

Internal Connectors

LVDS Inverter Connector

Connector type: 1x7 7-pin header JST, 2.5mm pitch
Connector location: INV

System Reset Header

Connector type: 1x2 2-pin header, 2.54mm pitch
Connector location: RESET
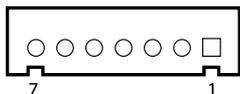
Pin	Definition	Pin	Definition
1	5V	2	12V
3	12V	4	Backlight Control
5	GND	6	GND
7	Backlight Enable		

Pin	Definition
1	RESET#
2	GND

LED Connector

Connector type: 1x5 5-pin header JST, 2.0mm pitch
Connector location: LED_CON

HDD LED Connector

Connector type: 1x2 2-pin header, 2.54mm pitch
Connector location: JP1
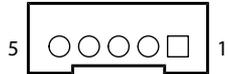
Pin	Definition	Pin	Definition
1	HDD_LED-	2	HDD_LED+
3	GND	4	Standby LED
5	PWR LED		

Pin	Definition
1	HDD_LED+
2	HDD_LED-

Line-out Connector

Connector type: 1x4 4-pin header, 2.0mm pitch
Connector location: LINE_OUT

1 □ ○ ○ ○ 4

Pin	Definition	Pin	Definition
1	LOUT_L	2	GND
3	LOUT_JD	4	LOUT_R

USB Connector

Connector type: 2x5 10-pin header
Connector location: J2

2 ○ ○ ○ ○ ○ 10
1 □ ○ ○ ○ ○ 9
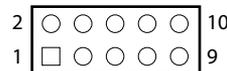
Pin	Definition	Pin	Definition
1	+5V_USB2_P45	2	GND
3	S_USB2DN4	4	GND
5	S_USB2DP4	6	S_USB2DP5
7	GND	8	S_USB2DN5
9	GND	10	+5V_USB2_P45

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USB Touch

Connector type: 1x6 6-pin header JST, 2.5mm pitch
Connector location: W_USB

System Power Button Header

Connector type: 1x2 2-pin header JST, 2.0mm pitch
Connector location: J1
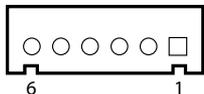
Pin	Definition	Pin	Definition
1	+5V_USB2_P2	2	S_USB2DN2
3	S_USB2DP2	4	S_USB2DN6
5	S_USB2DP6	6	GND

Pin	Definition
1	GND
2	PWRBTN#

DC Power Input

Connector type: 1x2 2-pin header, 3.96mm pitch
Connector location: CON1
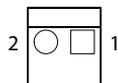
Pin	Definition
1	GND
2	+DC_IN

FAN Connector

Connector type: 1x4 4-pin header, 2.54mm pitch
Connector location: FAN1
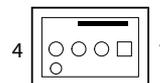
Pin	Definition	Pin	Definition
1	GND	2	+12V
3	FAN SPEED DETECT	4	FAN SPEED CONTROL

Debug Port/LPC Bus Connector

Connector type: 1x10 10-pin header, 1.0mm pitch
Connector location: NXM_DEBUG

COM Port Connector

Connector type: 1x9 9-pin header, 1.0mm pitch
Connector location: COM2

Pin	Definition	Pin	Definition
1	+3V	2	SERIRQ
3	LAD0	4	LAD1
5	LAD2	6	LAD3
7	LFRAME#	8	25MHZ
9	PLTRST#	10	GND

Pin	Definition	Pin	Definition
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

Battery Connector

Connector type: 1x2 2-pin header, 1.25mm pitch
Connector location: BATTERY1

Pin	Definition
1	BAT
2	GND

LVDS Panel Connector

Connector type: 1x40 40-pin header, 0.5mm pitch
Connector location: LVDS
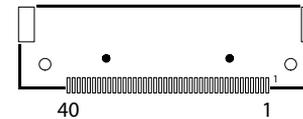
Pin	Definition	Pin	Definition
1	LVDS0_D3+	2	LVDS0_D3-
3	LVDS0_D2+	4	LVDS0_D2-
5	LVDS0_D1+	6	LVDS0_D1-
7	LVDS0_D0+	8	LVDS0_D0-
9	LVDS1_D3+	10	LVDS1_D3-
11	LVDS1_D2+	12	LVDS1_D2-
13	LVDS1_D1+	14	LVDS1_D1-
15	LVDS1_D0+	16	LVDS1_D0-
17	GND	18	+V_PANEL (3.3V or 5V)
19	+V_PANEL (3.3V or 5V)	20	+V_PANEL (3.3V or 5V)
21	GND	22	3.3V
23	GND	24	GND
25	GND	26	LVDS0_CLK+
27	LVDS0_CLK-	28	GND
29	GND	30	GND
31	SMBUS_CLK	32	Backlight Enable
33	Backlight Control	34	LVDS1_CLK+
35	LVDS1_CLK-	36	+12V
37	+12V	38	+12V
39	NC	40	SMBUS_DAT

Mini-PCIe Connector

Connector location: MINI_CARD
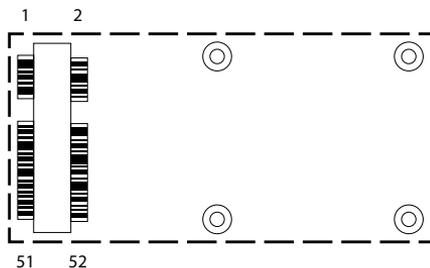
Pin	Definition	Pin	Definition
1	WAKE#	2	+3VSB
3	NC	4	GND
5	NC	6	+1.5V
7	NC	8	SIM_PWR
9	GND	10	SIM_DATA
11	REFCLK-	12	SIM_CLK
13	REFCLK+	14	SIM_RESET
15	GND	16	SIM_VPP
17	NC	18	GND
19	NC	20	WLAN_DISABLE#
21	GND	22	RESET#
23	PERn0	24	+3VSB
25	PERp0	26	GND

Pin	Definition	Pin	Definition
27	GND	28	+1.5V
29	GND	30	SMB_CLK
31	PETn0	32	SMB_DATA
33	PETp0	34	GND
35	GND	36	USB_D-
37	GND	38	USB_D+
39	+3VSB	40	GND
41	+3VSB	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	+1.5V
49	NC	50	GND
51	NC	52	+3VSB

M.2 Connector (M-Key)

Connector location: M2M
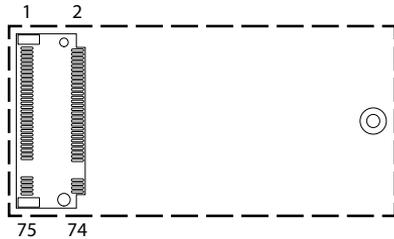
Pin	Definition	Pin	Definition
1	GND	2	+3VSB
3	GND	4	+3VSB
5	NC	6	NC
7	NC	8	NC
9	GND	10	M2M_LED#
11	NC	12	+3VSB
13	NC	14	+3VSB
15	GND	16	+3VSB
17	NC	18	+3VSB
19	NC	20	NC
21	GND	22	NC
23	NC	24	NC
25	NC	26	NC
27	GND	28	NC
29	NC	30	NC
31	NC	32	NC
33	GND	34	NC
35	NC	36	NC
37	NC	38	DEVSLP

Pin	Definition	Pin	Definition
39	GND	40	NC
41	SATA_RXP	42	NC
43	SATA_RXN	44	NC
45	GND	46	NC
47	SATA_TXN	48	NC
49	SATA_TXP	50	RESET#
51	GND	52	NC
53	NC	54	NC
55	NC	56	NC
57	GND	58	NC
67	NC	68	NC
69	NC	70	+3VSB
71	GND	72	+3VSB
73	GND	74	+3VSB
75	GND		

CHAPTER 3: SYSTEM SETUP

Removing the Top Cover from the Chassis

1. Remove the 7 screws from the top cover, then lift up the system chassis box to access the mainboard.

CAUTION! 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.

Installing DDR, SSD

2. With the top cover removed, install DDR, SSD.

Installing a WiFi or LTE Module

1. Remove the 6 screws on the board and IO bracket. Next, remove the board from the chassis.
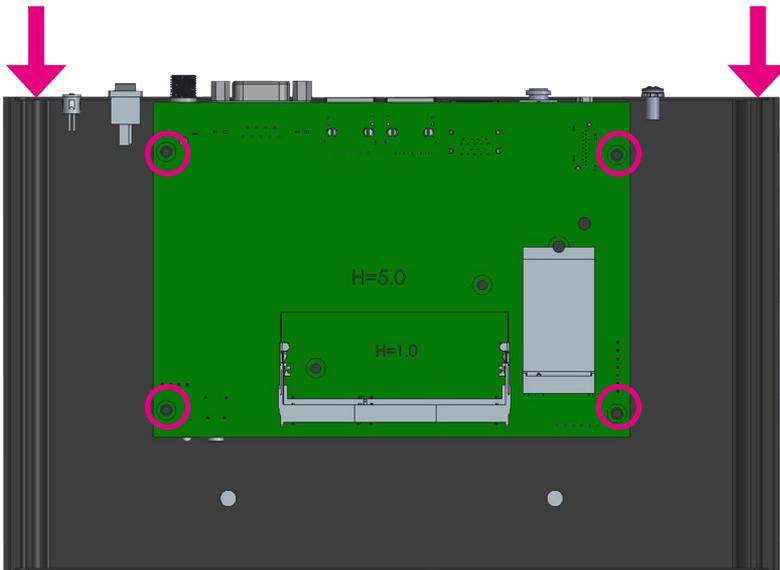
2. Locate the WiFi or LTE module.
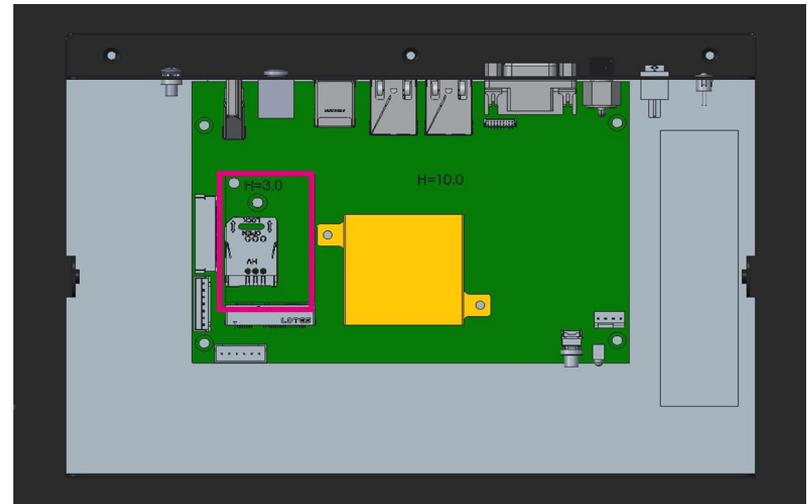
Installing VESA Mount Kit

1. Align the mounting holes on the VESA mount bracket to the VESA mounting holes on the back of the panel PC, then secure the VESA mount bracket with screws.

Recommended screws for the VESA mount kit:
4 * M4x8 screws.

Installing Open Frame Kit

1. Turn to the rear side of the panel PC and align the mounting holes on the open frame bracket to the open frame mounting holes on the panel PC, then secure the open frame bracket with screws.

6 * Screws (F3x5 Nylok NI+Heat)

System Dimensions with Open Frame Kit

Panel Mounting

1. Select a place on the panel where you will mount the panel PC.
2. Cut out a shape on the panel that corresponds to the panel PC's rear dimensions.

   The thickness of the panel (e.g. steel board, plank, acrylic board, wall, etc.) where you will mount the panel PC must not exceed 9.5mm. If the distance between the front bezel and panel mount hole is too wide, it will not fit the panel mount kit.

508.40±1.00

9.50

303.4±1.00

CUT OUT SIZE T=9.50mm (MAX)
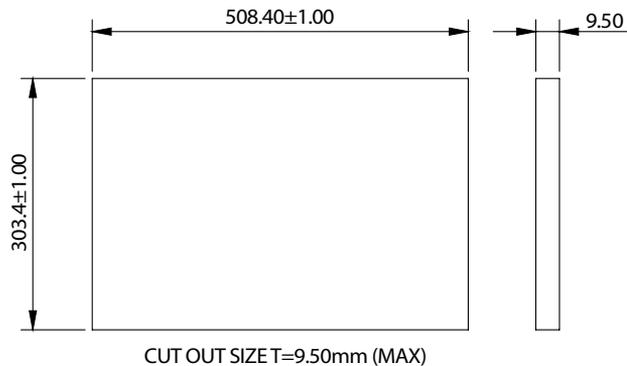
3. Slide the panel PC through the hole until it is properly fitted against the panel.

4. Position the mounting clamps along the rear edges of the panel PC. The first and second clamps must be positioned and secured diagonally prior to mounting the rest of the clamps.

14 * Screws
(F3x5 Nylok NI+Heat)
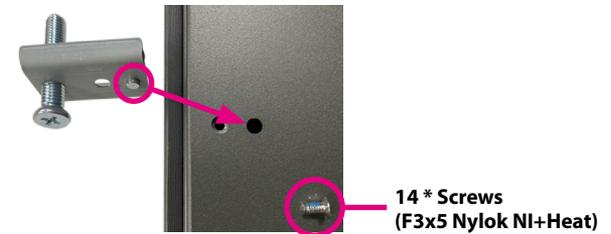
5. Tighten the clamp's screw until it touches the panel.

Panel   **Clamp**
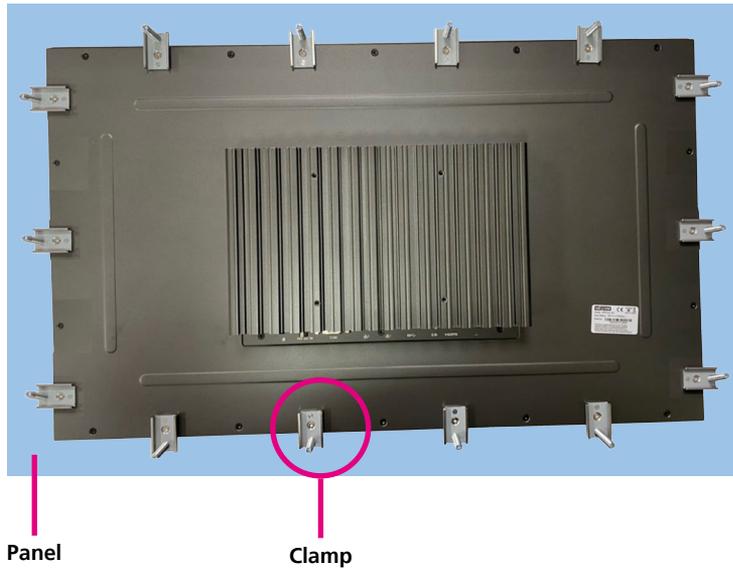
CAUTION! Do not overtighten the screws to prevent damaging the Panel PC.

CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for XPPC 22-100. 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 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.
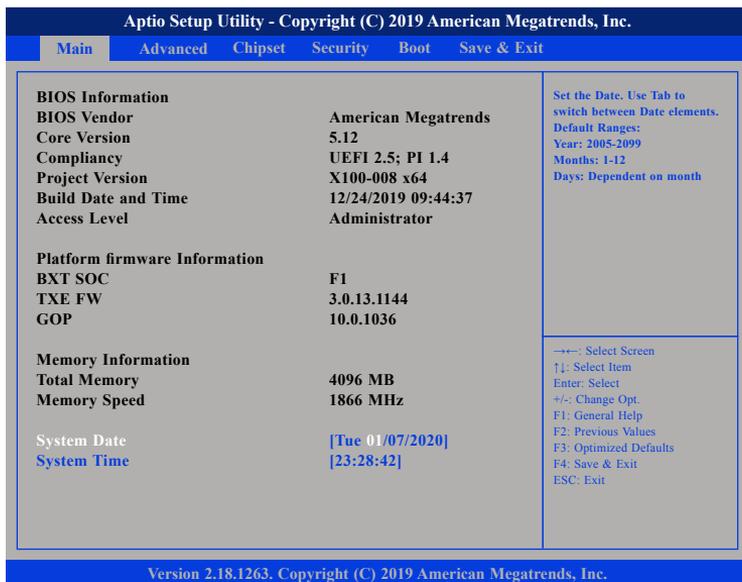
```
         Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Main    Advanced    Chipset    Security    Boot    Save & Exit

  BIOS Information                                        Set the Date. Use Tab to
  BIOS Vendor              American Megatrends            switch between Date elements.
  Core Version             5.12                           Default Ranges:
  Compliancy               UEFI 2.5; PI 1.4               Year: 2005-2099
  Project Version          X100-008 x64                   Months: 1-12
  Build Date and Time      12/24/2019 09:44:37            Days: Dependent on month
  Access Level             Administrator

  Platform firmware Information
  BXT SOC                  F1
  TXE FW                   3.0.13.1144
  GOP                      10.0.1036

  Memory Information                                      →←: Select Screen
  Total Memory             4096 MB                        ↑↓: Select Item
  Memory Speed             1866 MHz                       Enter: Select
                                                          +/-: Change Opt.
  System Date              [Tue 01/07/2020]               F1: General Help
  System Time              [23:28:42]                     F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit


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```

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 Utility - Copyright (C) 2019 American Megatrends, Inc.
    Main      Advanced    Chipset    Security    Boot    Save & Exit

  ATX mode                                              Select AC power state when
  Restore AC Power Loss          [Always Enable]        power is re-applied after a
► ACPI Settings                                         power failure.
► NCT6793D Super IO Configuration
► Hardware Monitor
► S5 RTC Wake Settings
► CPU Configuration
► Network Stack Configuration
► Trusted Computing
► USB Configuration

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

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```

Restore AC Power Loss
Configures the power state when power is re-applied after a power failure.

ACPI Settings

This section is used to configure ACPI settings.

```
            Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
              Advanced

  ACPI Settings                                         Enables or Disables System
                                                        ability to Hibernate (OS/S4
  Enable Hibernation             [Enabled]              Sleep State). This option may
  ACPI Sleep State               [S3 (Suspend to RAM)]  not be effective with some OS.

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

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```

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

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

NCT6793D Super IO Configuration

This section is used to configure the serial ports.

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced

  NCT6793D Super IO Configuration                    Set Parameters of Serial Port
                                                     2 (COMB)
  Super IO Chip                      NCT6793D
► Serial Port 1 Configuration
► Serial Port 2 Configuration




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


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```

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

Serial Port 1 Configuration

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced

  Serial Port 1 Configuration                        Enable or Disable Serial Port
                                                     (COM)
  Serial Port                        [Enabled]
  Device Settings                    IO=3F8h; IRQ=4;
  Onboard Serial Port Mode           [RS232]




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


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```

Serial Port
Enables or disables the serial COM port.

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

Onboard Serial Port Mode
Select this to change the serial port mode to RS232, RS422, RS485 No Terminator or RS485 With Terminator.

Serial Port 2 Configuration

```
              Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
        Advanced

      Serial Port 2 Configuration                                Enable or Disable Serial Port
                                                                 (COM)
      Serial Port                         [Enabled]
      Device Settings                     IO=2F8h; IRQ=3;




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


              Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.
```

Serial Port
Enables or disables the serial COM port.

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

Hardware Monitor

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

```
              Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
           Advanced

      Pc Health Status

      CPU Temperature                      : +37 °c
      System Temperature                   : +40 °c
      CPU Fan Speed                        : N/A

      VCORE                                : +0.808 V
      +3.3V                                : +3.344 V
      +5V                                  : +5.064 V
      +12V                                 : +12.000 V
      +1.35VDUAL                           : +1.384 V

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


              Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.
```

CPU Temperature
Detects and displays the current CPU temperature.

System Temperature
Detects and displays the current system temperature.

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

VCORE to 1.35VDUAL
Detects and displays the output voltages.

S5 RTC Wake Settings

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

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced

 Wake system from S5              [Disabled]        Enable or disable System wake
                                                    on alarm event. Select
                                                    FixedTime, system will wake on
                                                    the hr::min::sec specified.
                                                    Select DynamicTime , System
                                                    will wake on the current time
                                                    + Increase minute(s)




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



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```

Wake system from S5

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

CPU Configuration

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

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced

 CPU Configuration                                  Socket specific CPU Information

 ► Socket 0 CPU Information

   Speed                         1500 MHz
   64-bit                        Supported

 ► CPU Power Management
   Active Processor Cores        [Disabled]
   Intel Virtualization Technology  [Disabled]
   VT-d                          [Disabled]


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



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```

Active Processor Cores

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

Intel® Virtualization Technology

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

VT-d

Enables or disables VT-d function on MCH.

Socket 0 CPU Information

Display information on the CPU installed on socket 0.

```
            Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Advanced

  Socket 0 CPU Information

  Intel(R) Celeron(R) CPU J3455E @ 1.50GHz
  CPU Signature                  506CA
  Microcode Patch                1A
  Max CPU Speed                  1500 MHz
  Min CPU Speed                  800 MHz
  Processor Cores                4
  Intel HT Technology            Not Supported
  Intel VT-x Technology          Supported

  L1 Data Cache                  24 kB x 4
  L1 Code Cache                  32 kB x 4                  →←: Select Screen
  L2 Cache                       1024 kB x 2               ↑↓: Select Item
  L3 Cache                       Not Present               Enter: Select
                                                           +/-: Change Opt.
                                                           F1: General Help
                                                           F2: Previous Values
                                                           F3: Optimized Defaults
                                                           F4: Save & Exit
                                                           ESC: Exit

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```

CPU Power Management

```
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  Advanced

  CPU Power Management Configuration            Enable/Disable Intel SpeedStep
  EIST                           [Disabled]




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

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```

EIST
Enables or disables Intel® SpeedStep.

Network Stack Configuration

This section is used to configure the network stack settings.

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.		
Advanced		
Network Stack	[Disabled]	Enable/Disable UEFI Network Stack
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.18.1263. Copyright (C) 2019 American Megatrends, Inc.		
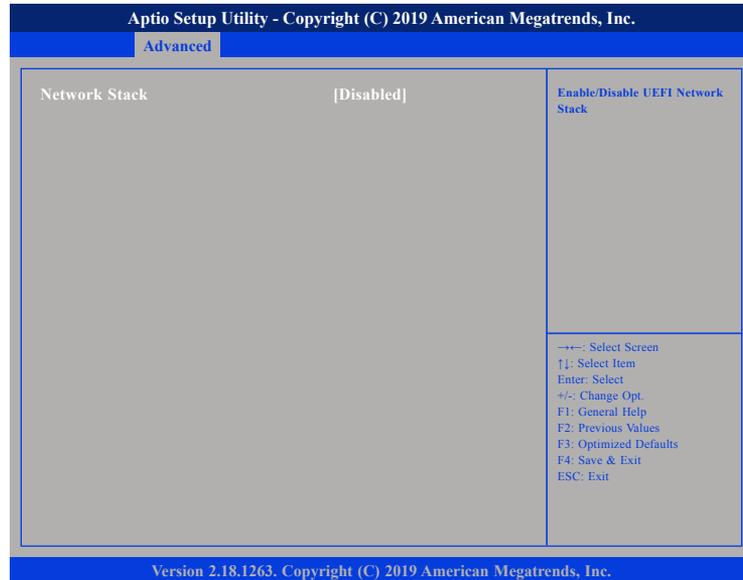
Network Stack
Enables or disables UEFI network stack.

Trusted Computing

This section is used to configure Trusted Platform Module (TPM) settings.

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.		
Advanced		
Configuration		Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
Security Device Support	[Disable]	
NO Security Device Found		
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Security Device Support
Enables or disables BIOS support for security device. O.S will not show Security Device. TCG EFI protocol and INT1A interface will not be available.

USB Configuration

This section is used to configure the USB.

```
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        Advanced

   USB Configuration                                      This is a workaround for OSes
                                                          without XHCI hand-off support.
   USB Module Version            17                       The XHCI ownership change
                                                          should be claimed by the XHCI
   USB Controllers:                                       driver.
      1 XHCI
   USB Devices:
      1 Keyboard

   XHCI Hand-off                 [Enabled]
   USB Mass Storage Driver Support [Enabled]

   USB hardware delays and time-outs:
   USB transfer time-out         [20 sec]                 →←: Select Screen
   Device reset time-out         [20 sec]                 ↑↓: Select Item
   Device power-up delay         [Auto]                   Enter: Select
                                                          +/-: Change Opt.
                                                          F1: General Help
                                                          F2: Previous Values
                                                          F3: Optimized Defaults
                                                          F4: Save & Exit
                                                          ESC: Exit



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```

XHCI Hand-off

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

USB Mass Storage Driver Support

Enables or disables USB mass storage driver support.

USB transfer time-out

The time-out value for control, bulk, and Interrupt transfers.

Device reset time-out

Selects the USB mass storage device's start unit command timeout.

Device power-up delay

Maximum time the value will take before it properly reports itself to the Host Controller. "Auto" uses default value: for a Root port it is 100 ms, for a Hub port the delay is taken from Hub descriptor.

Chipset

This section is used to configure the system based on the specific features of the chipset.

```
          Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
     Main      Advanced    Chipset    Security      Boot      Save & Exit

 ►  South Bridge                                    South Cluster Configuration
 ►  South Cluster Configuration









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

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```

⚠ Setting incorrect field values may cause the system to malfunction.

South Bridge

```
          Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
          Chipset

 SMBus Support                      [Enabled]              Enable/Disable SMBus Support









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

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```

SMBus Support
Enables or disables SMBus support.

South Cluster Configuration

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Chipset	
► **HD-Audio Configuration**	**HD-Audio Configuration Settings**
► **SATA Drives**	
► **USB Configuration**	
► **Miscellaneous Configuration**	
	→←: Select Screen
	↑↓: Select Item
	Enter: Select
	+/-: Change Opt.
	F1: General Help
	F2: Previous Values
	F3: Optimized Defaults
	F4: Save & Exit
	ESC: Exit
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HD-Audio Configuration

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.	
Chipset	
HD-Audio Configuration	**Enable/Disable HD-Audio Support**
HD-Audio Support [Enable]	
	→←: Select Screen
	↑↓: Select Item
	Enter: Select
	+/-: Change Opt.
	F1: General Help
	F2: Previous Values
	F3: Optimized Defaults
	F4: Save & Exit
	ESC: Exit
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HD-Audio Support
Enables or disables HD Audio support.

SATA Drives

```
         Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
                Chipset

  SATA Drives                                              Enables or Disables the
                                                           Chipset SATA Controller.   The
  Chipset-SATA Controller Configuration                    Chipset SATA controller
    Chipset SATA                 [Enable]                  supports the 2 black internal
    SATA Test Mode               [Disabled]                SATA ports (up to 3Gb/s
                                                           supported per port).
    SATA Port 0                  UDinfo  M2S  128  (128.0...
    Port 0                       [Enabled]

    SATA Port 1                  [Not Installed]
    Port 1                       [Enabled]

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

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```

Chipset SATA
Enables or disables the SATA controller chipset. The SATA controller chipset supports the 2 black internal SATA ports (up to 3Gb/s supported per port).

SATA Test Mode
Enables or disables SATA test mode.

Port 0
Enables or disables SATA port 0.

Port 1
Enables or disables SATA port 1.

USB Configuration

```
         Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
                Chipset

  xHCI Mode                      [Enable]                  Once disabled, XHCI controller
                                                           would be function disabled,
                                                           none of the USB devices are
                                                           detectable and usable during
                                                           boot up and in OS. Do not disable
                                                           it unless for debug purposes.

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

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```

xHCI Mode
Enables or disables XHCI mode. Once disabled, XHCI controller function will be disabled and all the USB devices will not be detectable and usable during boot up and in OS. Please do not disable it unless for debugging purposes.

Miscellaneous Configuration

```
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                            Chipset

  Miscellaneous Configuration                        Select USB power state in S5.
  High Precision Timer            [Enable]
  USB Power State in S5           [ON]









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



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```

High Precision Timer

Enables or disables high precision event timer.

USB Power State in S5

Configures the USB power state in S5.

Security

```
Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.
  Main    Advanced    Chipset    Security    Boot    Save & Exit

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



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```
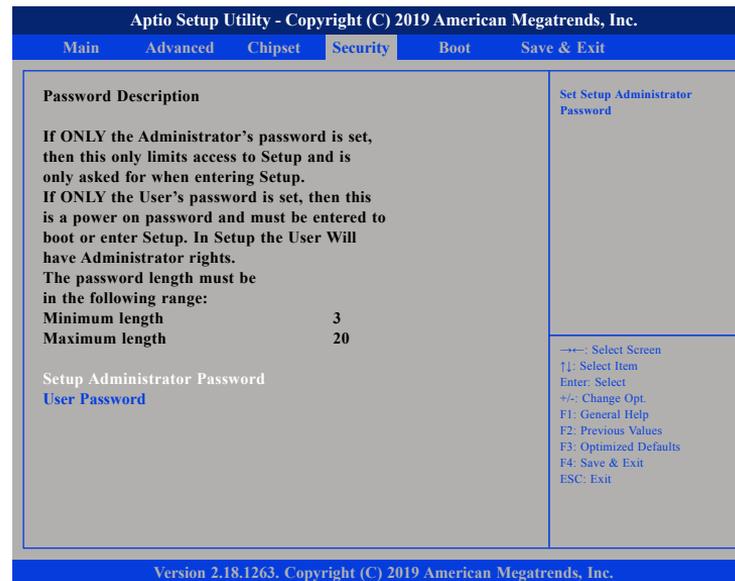
Setup Administrator Password

Select this to reconfigure the administrator's password.

User Password

Select this to reconfigure the user's password.

Boot

Boot Configuration		Select the keyboard NumLock state
Bootup NumLock State	[On]	
Quiet Boot	[Enabled]	
Boot Option Priorities		
Boot Option #1	[Windows Boot Manage...]	
Boot Option #2	[UEFI: Built-in EFI ...]	
Fast Boot	[Disable]	

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

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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
Enabled   Displays OEM logo instead of the POST messages.
Disabled   Displays normal POST messages.

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.

Fast Boot
Enables or disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.
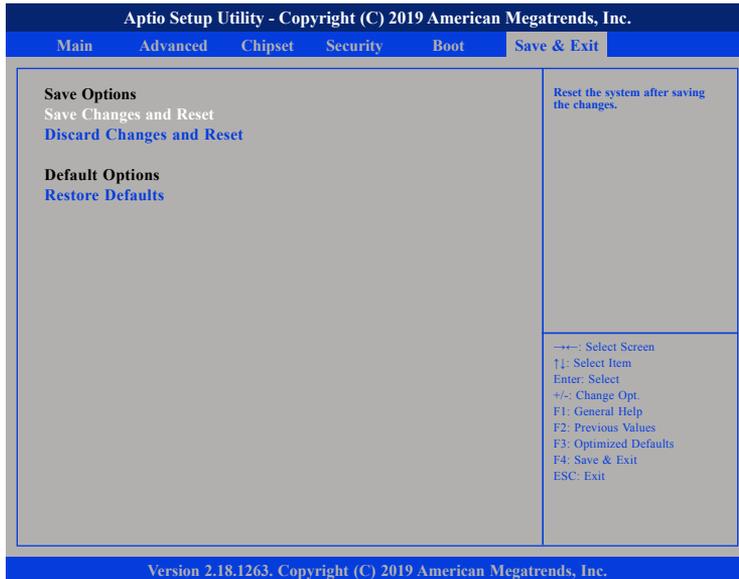
Save & Exit

Aptio Setup Utility - Copyright (C) 2019 American Megatrends, Inc.					
Main	Advanced	Chipset	Security	Boot	**Save & Exit**

Save Options
Save Changes and Reset
Discard Changes and Reset

Default Options
Restore Defaults

Reset the system after saving
the changes.

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

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Save Changes and Reset
To save the changes and reset, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

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

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