NEXCOM International Co., Ltd.

Intelligent Platform & Services Business Unit
Passenger Information Panel PC
TPPC 2210 and TPPD 2200 Series
User Manual

CONTENTS

Preface

Chapter 1: Product Introduction

Chapter 2: Jumpers and Connectors

Chapter 3: System Setup

Chapter 4: BIOS Setup

Appendix A: Watchdog

PREFACE

Copyright

This publication, including all photographs, illustrations and software, is protected under international copyright laws, with all rights reserved. No part of this manual may be reproduced, copied, translated or transmitted in any form or by any means without the prior written consent from NEXCOM International Co., Ltd.

Disclaimer

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

Acknowledgements

TPPC 2210, TPPC 2210T and TPPD 2200 are trademarks of NEXCOM International Co., Ltd. All other product names mentioned herein are registered trademarks of their respective owners.

Regulatory Compliance Statements

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

Declaration of Conformity

FCC

This equipment has been tested and verified to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area (domestic environment) is likely to cause harmful interference, in which case the user will be required to correct the interference (take adequate measures) at their own expense.

CE

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

RoHS Compliance

NEXCOM RoHS Environmental Policy and Status Update

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

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

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

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

How to recognize NEXCOM RoHS Products?

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

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

Warranty and RMA

NEXCOM Warranty Period

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

NEXCOM Return Merchandise Authorization (RMA)

- Customers shall enclose the "NEXCOM RMA Service Form" with the returned packages.

- Customers must collect all the information about the problems encountered and note anything abnormal or, print out any on-screen messages, and describe the problems on the "NEXCOM RMA Service Form" for the RMA number apply process.

- Customers can send back the faulty products with or without accessories (manuals, cable, etc.) and any components from the card, such as CPU and RAM. If the components were suspected as part of the problems, please note clearly which components are included. Otherwise, NEXCOM is not responsible for the devices/parts.

- Customers are responsible for the safe packaging of defective products, making sure it is durable enough to be resistant against further damage and deterioration during transportation. In case of damages occurred during transportation, the repair is treated as "Out of Warranty."

- Any products returned by NEXCOM to other locations besides the customers' site will bear an extra charge and will be billed to the customer.

Repair Service Charges for Out-of-Warranty Products

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

Repair Service Charges for Out-of-Warranty Products

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

System Level

- Component fee: NEXCOM will only charge for main components such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistor, capacitor.

- Items will be replaced with NEXCOM products if the original one cannot be repaired. Ex: motherboard, power supply, etc.

- Replace with 3rd party products if needed.

- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Board Level

- Component fee: NEXCOM will only charge for main components, such as SMD chip, BGA chip, etc. Passive components will be repaired for free, ex: resistors, capacitors.

- If RMA goods can not be repaired, NEXCOM will return it to the customer without any charge.

Warnings

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

Cautions

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

Safety Information

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

▪ Read all instructions carefully.

▪ Do not place the unit on an unstable surface, cart, or stand.

▪ Follow all warnings and cautions in this manual.

▪ When replacing parts, ensure that your service technician uses parts specified by the manufacturer.

▪ Avoid using the system near water, in direct sunlight, or near a heating device.

▪ The load of the system unit does not solely rely for support from the rackmounts located on the sides. Firm support from the bottom is highly necessary in order to provide balance stability.

▪ The computer is provided with a battery-powered real-time clock circuit. There is a danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Installation Recommendations

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

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

▪ A Philips screwdriver

▪ A flat-tipped screwdriver

▪ A grounding strap

▪ An anti-static pad

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

Safety Precautions

1. Read these safety instructions carefully.

2. Keep this User Manual for later reference.

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

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

5. Keep this equipment away from humidity.

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

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

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

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

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

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

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

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

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

15. Do not place heavy objects on the equipment.

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

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

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

America
USA
NEXCOM USA

2883 Bayview Drive,
Fremont CA 94538, USA
Tel: +1-510-656-2248
Fax: +1-510-656-2158
Email: sales@nexcom.com
www.nexcom.com

Asia
Taiwan
NEXCOM Intelligent Systems

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

NEXCOM Intelligent Systems
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

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

China
NEXCOM China

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, 200333, China
Tel: +86-21-5278-5868
Fax: +86-21-3251-6358
Email: sales@nexcom.cn
www.nexcom.cn

NEXCOM Surveillance Technology Corp.

Room202, Building B,
the GuangMing Industrial Zone Zhonghua Rd.,
Minzhi Street, Longhua District,
Shenzhen 518131, China
Tel: +86-755-8364-7768
Fax: +86-755-8364-7738
Email: steveyang@nexcom.com.tw
www.nexcom.cn

NEXCOM United System Service

Hui Yin Ming Zun Building Room 1108,
Building No. 11, 599 Yunling Road, Putuo District,
Shanghai, 200062, China
Tel: +86-21-6125-8282
Fax: +86-21-6125-8281
Email: frankyang@nexcom.cn
www.nexcom.cn

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

Italy
NEXCOM ITALIA S.r.l

Via Lanino 42,
21047 Saronno (VA), Italia
Tel: +39 02 9628 0333
Fax: +39 02 9625 570
Email: nexcomitalia@nexcom.eu
www.nexcomitalia.it

Package Contents

Before continuing, verify that the TPPC 2210(T)/TPPD 2200 package that you received is complete. Your package should have all the items listed in the following table.

TPPC 2210/TPPC 2210T

Item	Name	Qty
1	I/O Cable	1
2	Power Cable	1
3	SATA Cable	1
4	Driver DVD	1

TPPD 2200

Item	Name	Qty
1	Power Cable	1
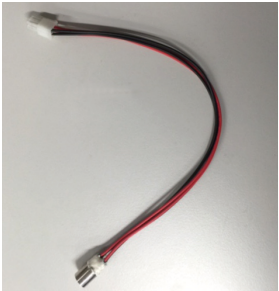
I/O Cable   **Power Cable**

Ordering Information

The following below provides ordering information for the AIO PPC and display.

- **Barebone**

TPPC 2210 (P/N: 10ID0221001X0)
In-Vehicle Signage Panel PC powered by Intel® Celeron® Processor N2807 1.58GHz

TPPC 2210T (P/N: 10ID0221000X0)
In-Vehicle Signage Panel PC with CAT5 TX Extender powered by Intel® Celeron® Processor N2807 1.58GHz

TPPD 2200 (P/N: 10ID0220000X0)
21.5" Full-HD Vehicle Display with CAT5 Interfaces

- **Options**

1. VESA Mount Kit (P/N:)
  - 1x VESA Mount Bracket
  - 8x Screws
  - 8x P3 Screws
  - 6x M5 Screws

CHAPTER 1: PRODUCT INTRODUCTION

TPPC 2210

Overview

Key Features

- 16:9 21.5" Fanless Panel Computer

- Intel® Celeron® processor N2807

- Wide-range power input of 12V to 36V DC

- Front bezel compliant with IP54

- Tempered glass

- Support Wi-Fi, 3G and GPS modules

- DDR3L up to 4GB, 2.5" SSD bracket, two speakers

TPPC 2210T

Overview

Key Features

- 16:9 21.5" Fanless Panel Computer

- Intel® Celeron® processor N2807

- Wide-range power input of 12V to 36V DC

- Front bezel compliant with IP54

- Tempered glass

- Support Wi-Fi, 3G and GPS modules

- DDR3L up to 4GB, 2.5" SSD bracket, two speakers

- Support Cat 5 Extender Daisy Chain (TX)

TPPD 2200

Overview

Key Features

- 16:9 21.5" Full-HD TFT LCD panel

- Wide-range power input of 12V to 36V DC

- Front bezel compliant with IP54

- Tempered glass

- Support Cat 5 Extender Daisy Chain (TX/RX)

Hardware Specifications

Panel
(TPPC 2210/TPPC 2210T/TPPD 2200)

- LCD size: 21.5", 16:9
- Resolution: Full HD, 1920 x 1080
- Luminance: 500 cd/m²
- Contrast ratio: 3,000
- LCD color: 16.7M
- Viewing angle: 178 (H), 178 (V)
- Backlight: LED

System
(TPPC 2210/TPPC 2210T)

- CPU: Intel® Bay Trail N2807 Dual Core 1.58GHz
- BIOS: AMI BIOS
- System chipset: Intel® integrated
- System memory:
  1x 204-pin DDR3L SODIMM socket, up to 4GB, support up to 1333/1066MHz with un-buffered and Non-ECC
- Hard drive bay: optional 2.5" SATA SSD
- Watchdog timer: Watchdog timeout can be programmed by software from 1 second to 255 seconds and from 1 minute to 255 minutes (Tolerance 15% under room temperature 25°C)
- H/W status monitor: Monitors system temperature, and voltage
- Expansion: 2x Mini-PCIe sockets
- Cat 5 Extender TX board (TPPC 2210T only)

(TPPD 2200)

- CPU: Novatek Panel controller NT68660
- Cat.5 Extender TX/RX board

Rear I/O
(TPPC 2210/TPPC 2210T)

- COM : 1x RS232
- Ethernet: 1x RJ45
- USB: 2x USB 2.0
- Power switch
- DC-IN
- Cat.5 Extender

(TPPC 2210/TPPC 2210T)

- DC-IN
- Cat 5 Extender TX
- Cat 5 Receiver RX (TPPD 2200 only)

Audio
(TPPC 2210/TPPC 2210T)

- ALC622 audio codec
- Two 2W speakers

Ethernet
(TPPC 2210/TPPC 2210T)

- LAN chip: Realtek RTL8111G Gigabit LAN
- Ethernet interface: 10/100/1000 Based-Tx

Mechanical and Environment

- Color: pantone black
- Mounting: (Optional)
  VESA Mount Kit (75x75; 100x100; 200x200)

Vehicle Mount Kit
- Power input: 12V ~ 36V DC
- Vibration: (w/SSD)
  Random vibration test (Operating): 1g @5~500Hz
  Operating: MIL-STD-810G, 514.6 Procedure 1, Category 4
  Storage: MIL-STD-810G, 514.6 Procedure 1, Category 24
- Shock:
  Operating: MIL-STD-810G, Method 516.6, Procedure I, Trucks and semi-
  trailers= 20g
  Crash hazard: MIL-STD-810G, Method 516.6, Procedure V, Ground
  equipment= 75g
- Operating temperature: -10°C to 40°C
- Storage temperature: -20°C to 60°C
- Operating humidity: 10 to 90% (Non-condensing)
- Dimension: 528.46mm x 323.06mm x 58mm (W x D x H)
- Weight: 7kg

Certification

- CE approval
- FCC Class A
- E-Mark: E-13

Knowing Your TPPC 2210/TPPC 2210T

Rear Bottom

Knowing Your TPPD 2200

Rear Bottom

Antenna Holes for Optional Wi-Fi

The 3 external antenna mounting holes are used to mount and connect optional Wi-Fi/GPS/GSM antennas.

Power Switch

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

LAN / COM

Used to connect the system to a local area network. The COM port supports RS232 compatible serial devices.

USB

Used to connect USB 2.0/1.1 devices.

Cat.5 Extender TX (TPPC 2210T Only)

Extender Video signal over Cat 5 Cable.

12-36V DC Input

Used to plug a DC power cord.

Cat.5 Extender TX

Extender video signal over Cat 5 cable.

Cat.5 Receiver RX

Receive video signal from TX side over Cat 5 cable.

12-36V DC Input

Used to plug a DC power cord.

Rear and VESA Mount

VESA Mounting Hole for TPPC 2210/TPPD 2200

The VESA mount fixed on the machine.
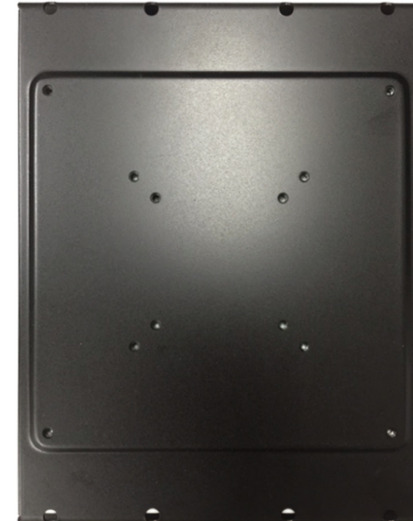
VESA Mounting Hole for Bracket

VESA Mounting Hole 75 x 75mm
VESA Mounting Hole 100 x 100mm
VESA Mounting Hole 200 x 200mm

Mechanical Dimensions

TPPC 2210

528.46

323.06

58.00

25.00

46.53

219.80

101.73

426.73

SCALE   0.500

SCALE   0.500

TPPD 2200

530.46

323.00

SCALE   0.500

57.80

97.73

335.00

SCALE   0.500

With VESA Mount

530.46

323.06

68.40
58.00
25.00

46.53
219.80

200.00
100.00
75.00

75.00
100.00
200.00

SCALE   0.500

SCALE   0.500

97.73

432.73
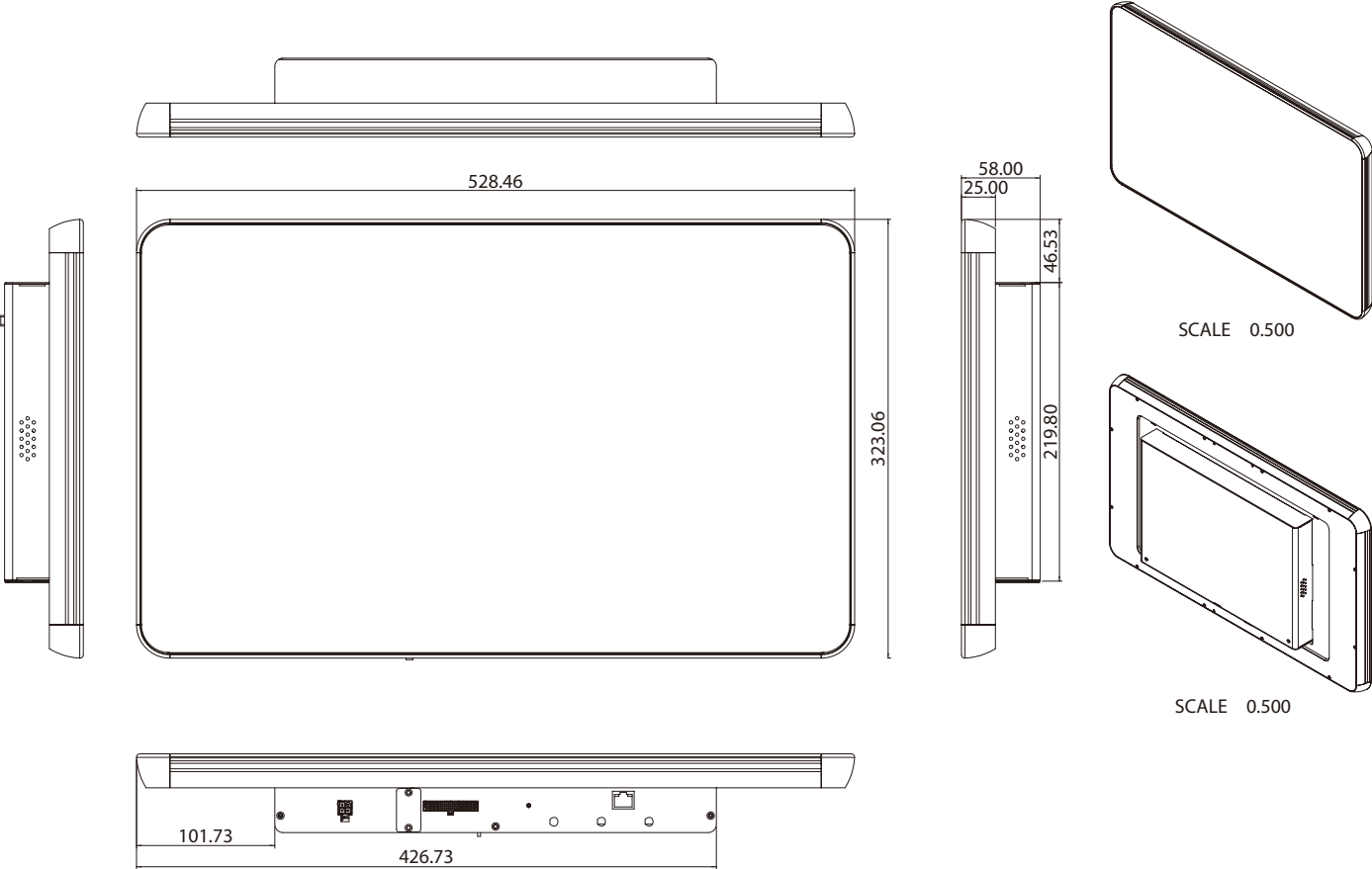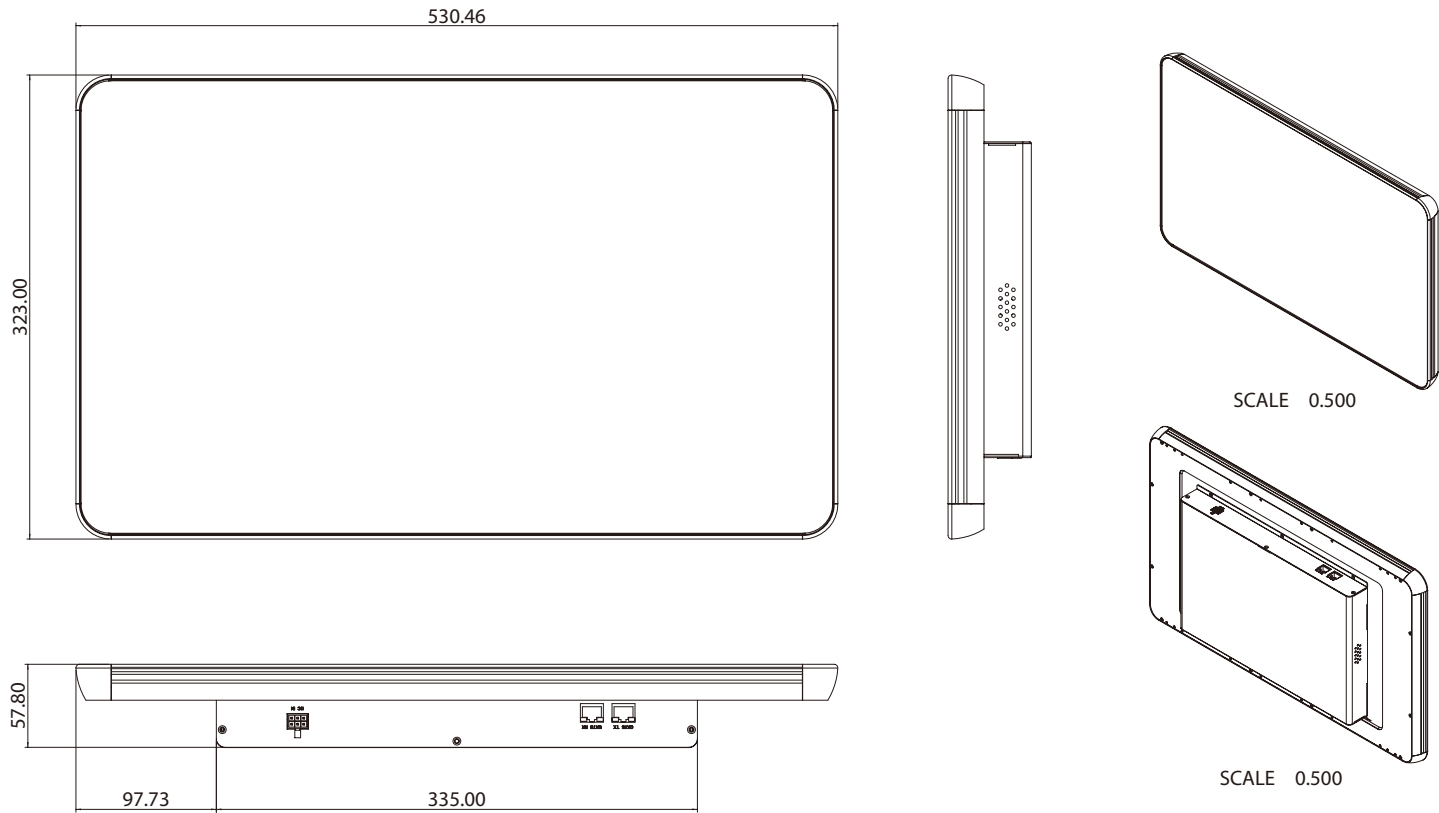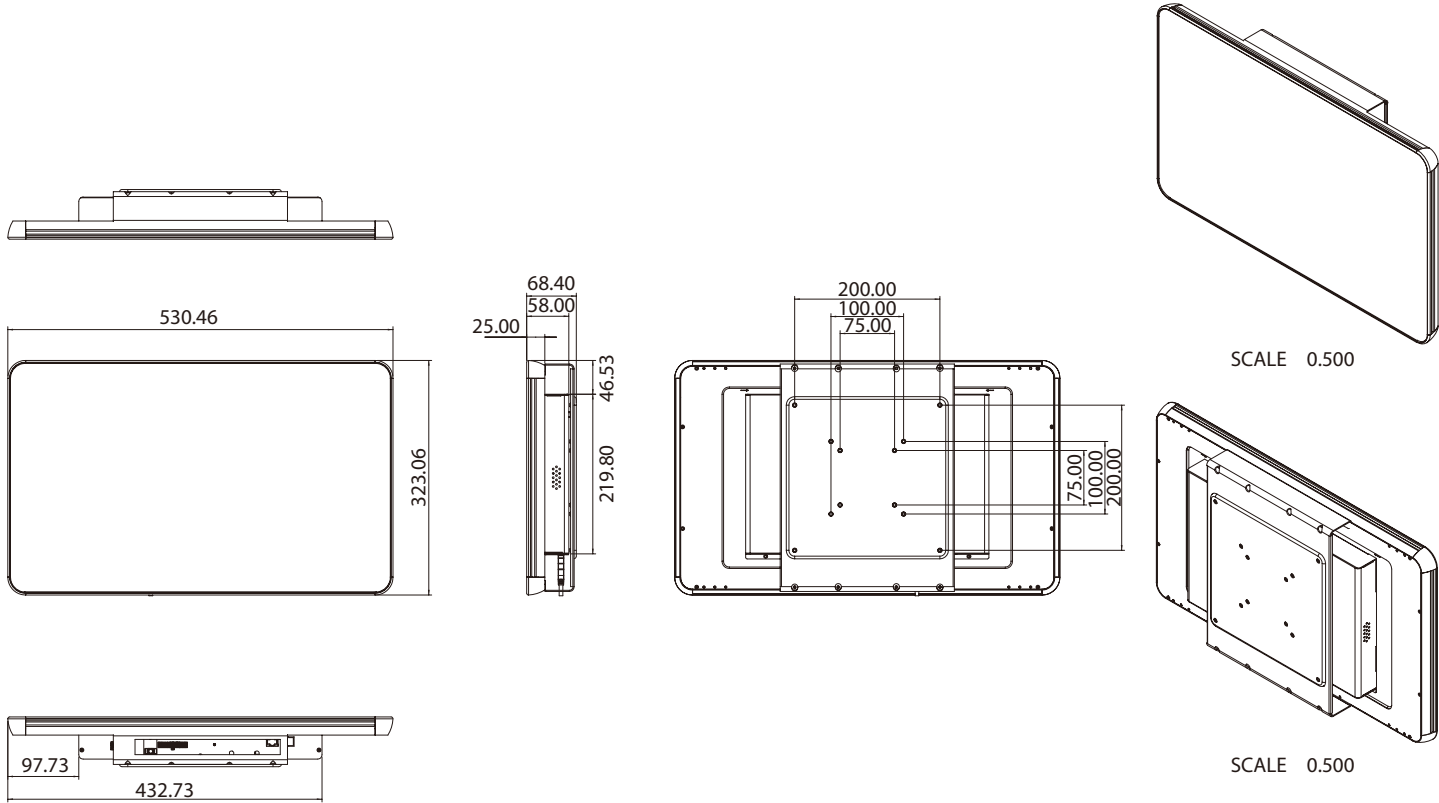
CHAPTER 2: JUMPERS AND CONNECTORS

This chapter describes how to set the jumpers and connectors for the TPPC 2210 and TPPD 2200 series.

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.

11 TPPC 2210 and TPPD 2200 Series User Manual

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)
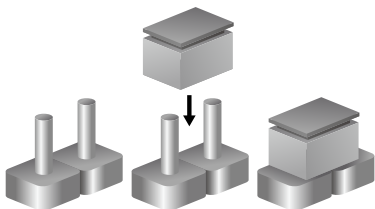
Three-Pin Jumpers: Pins 1 and 2 are Short
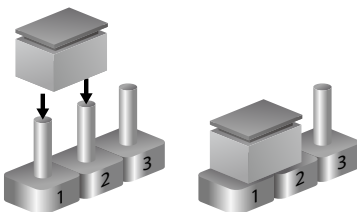
TPPC 2210 and TPPD 2200 System Boards

TPPC 2210 consists of a motherboard, power board and TX board.
TPPD 2200 consists of an AD board and RX board.

This chapter lists the pinout assignment of the jumpers and connectors on the motherboard and AD board, and the location of the jumpers and connectors on the power, TX and RX board.

Location of the Connectors for TPPC 2210 Motherboard

Top View

SATA II Port (SATA1)
CPUFAN Header
PS2 KB/MS Header
Front Panel Header (FP)
Power Switch
Reset Button
SATA Power (PWOUT)
USB 2.0 Header (USB2/4)
SMBUS Header
DDR3L SO-DIMM Slot
COM Headers COM1 COM2 COM3 COM4
Half-size Mini-PCIe
GPIO Header
LVDS Header
Full-size Mini-PCIe/mSATA Slot
LANLED Headers (LAN1LED LAN2LED)
INVERTER
SPDIF Out Header
Front Panel Audio Header (FP_AUDIO)
Line-out
USB 3.0 over USB 2.0
DVI-I Port
RJ-45 LAN
RJ-45 LAN
Dual USB 2.0
9V ~ 24V DC Input

Bottom View

Location of the Jumpers for TPPC 2210 Motherboard

Top View
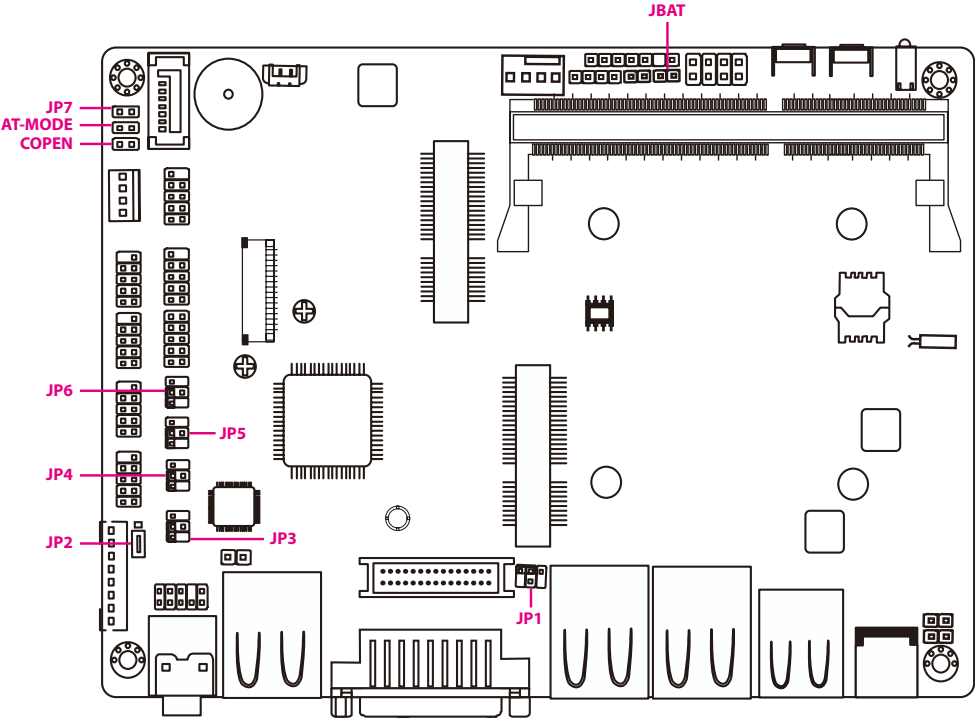
Motherboard

Jumper Table

Connector	Name	Description
JP1	LVDS PVCC 5V/3.3V/12V Select	4-Pin Block
JP2	INVERTER VCC 5V/12V Select	3-Pin Block
JP3	COM4 Header Pin9 Function Select	4-Pin Block
JP4	COM3 Header Pin9 Function Select	4-Pin Block
JP5	COM2 Header Pin9 Function Select	4-Pin Block
JP6	COM1 Header Pin9 Function Select	4-Pin Block
JBAT	CMOS RAM Clear Function Setting	2-Pin Block
COPEN	Case Open Message Display Function	2-Pin Block
AT_MODE	AT Mode Function Select	2-Pin Block
JP7	Security Measure Function Select	2-Pin Block

Header Table

Connector	Name	Description
FP_AUDIO	Front Panel Audio Header	9-pin Block
SPDIFOUT	SPDIF Out Header	2-pin Block
COM1/2/3/4	Serial Port Header X4	9-pin Block
GPIO	GPIO Header	10-pin Block
USB3/USB4	USB 2.0 Header	9-pin Block
SMBUS	SMBUS Header	4-pin Block
PS2KBMS	PS2KBMS Header	6-pin Block
FP	Front Panel Header (PWR LED/HDD LED/ Power Button/Reset)	8-pin Block
LAN1LED LAN2LED	LAN Activity LED Headers	2-pin Block
LVDS	24-bit LVDS Header	30-pin Block

Connector Table

Connector	Name
DCIN	DC 9V-24V Power-in Connector
SATA1	SATAII Port Connector
PWOUT1	SATA Power out Connector
CPUFAN	CPUFAN Connector
INVERTER	LVDS Inverter Connector
USB1/USB3(Top)	USB 2.0 Port Connector X3
USB3(Bottom)	USB 3.0 Port Connectors X1
LAN1/2	RJ-45 LAN Port Connector X2
DVI	DVI-I Port Connector
AUDIO	Audio Line Out Connector

Jumpers

LVDS PVCC 3.3V/5V/12V Function Select

Connector type: 4-pin header
Connector location: JP1
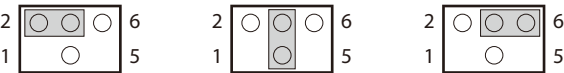
Pin	Status	Settings
2-4	Short	VCC= 3.3V
3-4	Short	VCC= 5V
4-6	Short	VCC= 12V

Inverter VCC 5V/12V Select

Connector type: 1x3 3-pin header
Connector location: JP2

Pin	Status	Settings
1-2	Short	VCC= 5V
2-3	Short	VCC= 12V

COM4 Header Pin 9 Function Select

Connector type: 4-pin header
Connector location: JP3
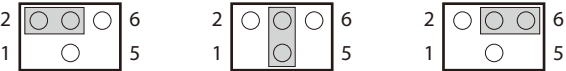
Pin	Status	Settings
2-4	Short	RI= RS232
3-4	Short	RI= 5V
4-6	Short	RI= 12V

COM3 Header Pin 9 Function Select

Connector type: 4-pin header
Connector location: JP4
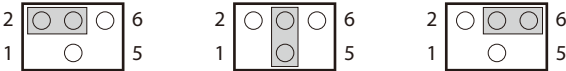
Pin	Status	Settings
2-4	Short	RI= RS232
3-4	Short	RI= 5V
4-6	Short	RI= 12V

COM2 Header Pin 9 Function Select

Connector type: 4-pin header
Connector location: JP5
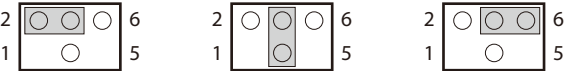
Pin	Status	Settings
2-4	Short	RI= RS232
3-4	Short	RI= 5V
4-6	Short	RI= 12V

COM1 Header Pin 9 Function Select

Connector type: 4-pin header
Connector location: JP6
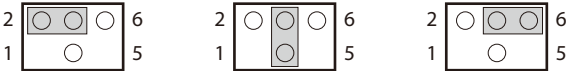
Pin	Status	Settings
2-4	Short	RI= RS232
3-4	Short	RI= 5V
4-6	Short	RI= 12V

Clear CMOS

Connector type: 1x2 2-pin header
Connector location: JBAT

1 ▢ ◯ 2   1 ▨ ◯ 2

Pin	Status	Settings
1-2	Open	Normal
1-2	Short	Clear CMOS

Case Open Message Display Function Select

Connector type: 1x2 2-pin header
Connector location: COPEN

1 ▢ ◯ 2

Pin	Definition
1	Case open function
2	GND

Pin 1-2 Closed (Short): To enable case open detection, short the case open function pin to GND and enable the 'Case Open Detect' function in the BIOS menu. When enabled, if the case is removed and the computer reboots, a message will be displayed on screen to inform you about the removal.

AT Mode Function Select

Connector type: 1x2 2-pin header
Connector location: AT-MODE

1 □ ○ 2   1 ▣ ○ 2

Pin	Status	Settings
1-2	Open	Normal
1-2	Short	AT Mode Selected

Pin 1-2 Closed (Short): Enables AT_MODE function. When enabled, the computer will automatically turn back on after power resumes from a sudden failure.

Security Measure Function Select

Connector type: 1x2 2-pin header
Connector location: JP7

1 □ ○ 2   1 ▣ ○ 2

Pin	Status	Settings
1-2	Open	Enable Security Measures in the Flash Descriptor (Default)
1-2	Short	Disable Security Measures in the Flash Descriptor (Override)

Connector Pin Definitions

Rear I/O Connectors

USB 2.0

DVI-I Port

RJ-45 LAN Ports

USB 2.0 Ports

Line-out Port

USB 3.0

9V~24V DC Power-in Connector
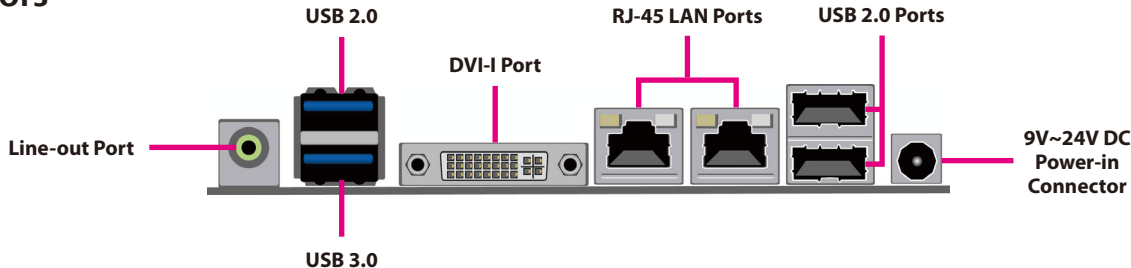
SATA II Connector

Connector type: Standard Serial ATA 7P (1.27mm, SATA-M-180)
Connector location: SATA1

SATA Power Connector

Connector type: 1x4 4-pin header
Connector location: PWOUT
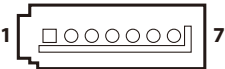
Pin	Definition	Pin	Definition
1	GND	2	TXP
3	TXN	4	GND
5	RXN	6	RXP
7	GND	8	

Pin	Definition	Pin	Definition
1	+5V	2	GND
3	GND	4	+12V

CPU Fan Connector

Connector type: 1x4 4-pin header
Connector location: CPUFAN

1 | □ ○ ○ ○ | 4
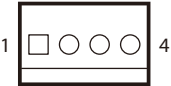
Pin	Definition	Pin	Definition
1	GND	2	VCC
3	Fan Clock	4	Control

LVDS Inverter Connector

Connector type: 1x8 8-pin header
Connector location: INVERTER

1 | □ ○ ○ ○ ○ ○ ○ ○ | 8

Pin	Definition	Pin	Definition
1	Backlight Enable	2	Backlight PWM
3	PVCC	4	PVCC
5	GND	6	GND
7	Backlight Up SW	8	Backlight Down SW

Line-out and Mic-in Header

This header connects to the front panel line-out and mic-in through cable.
Connector type: 2x5 10-pin header
Connector location: FP_AUDIO

```
2 [ O O O O O ] 10
1 [ □ O O O O ] 9
```
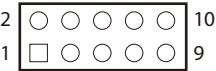
Pin	Definition	Pin	Definition
1	MIC-R	2	GND
3	MIC-L	4	NC
5	Lineout-R	6	NC
7	NC	8	KEY
9	Lineout-L	10	NC

SPDIF Out Header

Connector type: 1x2 2-pin header
Connector location: SPDIFOUT

```
1 [ □ O ] 2
```

Pin	Definition
1	SPDIFOUT
2	GND

Serial Port Headers

Connector type: 2x5 9-pin header
Connector location: COM4, COM3, COM2 and COM1
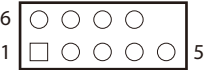
Pin	Definition	Pin	Definition
1	DCD	2	SIN
3	SOUT	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI		

GPIO Header

Connector type: 2x5 10-pin header
Connector location: GPIO
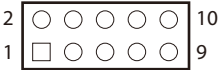
Pin	Definition	Pin	Definition
1	GPIO_80	2	GPIO_81
3	GPIO_82	4	GPIO_83
5	GPIO_84	6	GPIO_85
7	GPIO_86	8	GPIO_87
9	GND	10	VCC

USB 2.0 Port Header

Connector type: 2x5 9-pin header
Connector location: USB2 and USB4
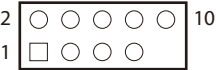
Pin	Definition	Pin	Definition
1	VCC	2	VCC
3	-DATA	4	-DATA
5	+DATA	6	+DATA
7	GND	8	GND
		10	NC

SMBus Header

Connector type: 1x4 4-pin header
Connector location: SMBUS

Pin	Definition	Pin	Definition
1	VCC	2	SMBUS_CLK
3	GND	4	SMBUS_DATA

PS/2 Keyboard & Mouse Header

Connector type: 1x7 6-pin header
Connector location: PS2KBMS

1 □ ○○○○○ 7

Pin	Definition	Pin	Definition
1	VCC		
3	KB_DATA	4	KB_CLK
5	GND	6	MS_CLK
7	MS_DATA		

Front Panel Header

Connector type: 2x4 8-pin header
Connector location: FP

2 ○○○○ 8
1 □○○○ 7
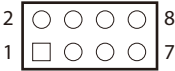
Pin	Definition	Pin	Definition
1	HDDLED+	2	PWRLED+
3	HDDLED-	4	PWRLED-
5	RSTSW	6	PWRBTN
7	GND	8	GND

LAN Activity LED Headers

Connector type: 1x2 2-pin header
Connector location: LAN1LED and LAN2LED

1 ▢ ◯ 2

Pin	Definition
1	LED+
2	LED-

24-bit Dual Channel LVDS Header

Connector type: 2x15 30-pin header
Connector location: LVDS
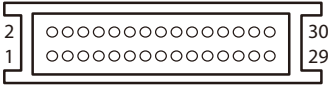
Pin	Definition	Pin	Definition
1	LVDSB_DATAN3	2	LVDSB_DATAP3
3	LVDS_CLKBN	4	LVDS_CLKBP
5	LVDSB_DATAN2	6	LVDSB_DATAP2
7	LVDSB_DATAN1	8	LVDSB_DATAP1
9	LVDSB_DATAN0	10	LVDSB_DATAP0
11	NC/DDC_DATA	12	NC/DDC_CLK
13	GND	14	GND
15	GND	16	GND
17	LVDSA_DATAP3	18	LVDSA_DATAN3
19	LVDS_CLKAP	20	LVDS_CLKAN
21	LVDSA_DATAP2	22	LVDSA_DATAN2
23	LVDSA_DATAP1	24	LVDSA_DATAN1
25	LVDSA_DATAP0	26	LVDSA_DATAN0
27	PVCC	28	PVCC
29	PVCC	30	PVCC

Location of the Jumpers and Connectors for TPPC 2210 Power Board

Top View
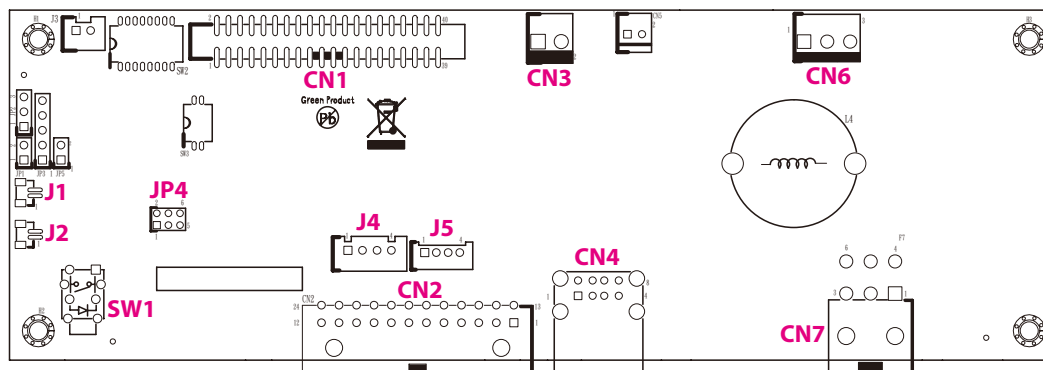
Bottom View
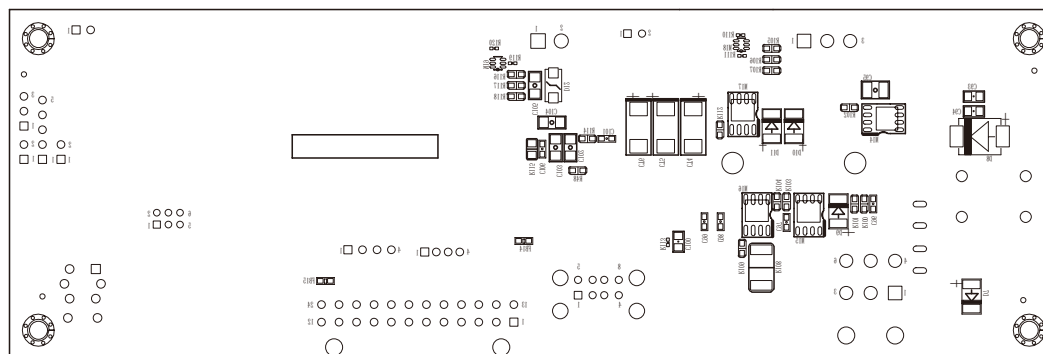
Power Board
Jumper and Connector Table

Connector	Definition
CN1	COM/Audio/USB/signal connect to MB
CN2	COM/LAN Connector
CN3	DC 5V Output
CN4	USB 2.0 x 2 port
CN6	DC 12V Output
CN7	DC 9 -36V Input Connector
J1	R Speaker Connector
J2	L Speaker Connector
J4	LAN signal connect to MB
J5	LAN signal connect to MB
JP4	Audio Pin Header
SW1	Power Push Button

Location of the Jumpers and Connectors for TPPC 2210 TX Board

Top View

CN3

CN2

U11
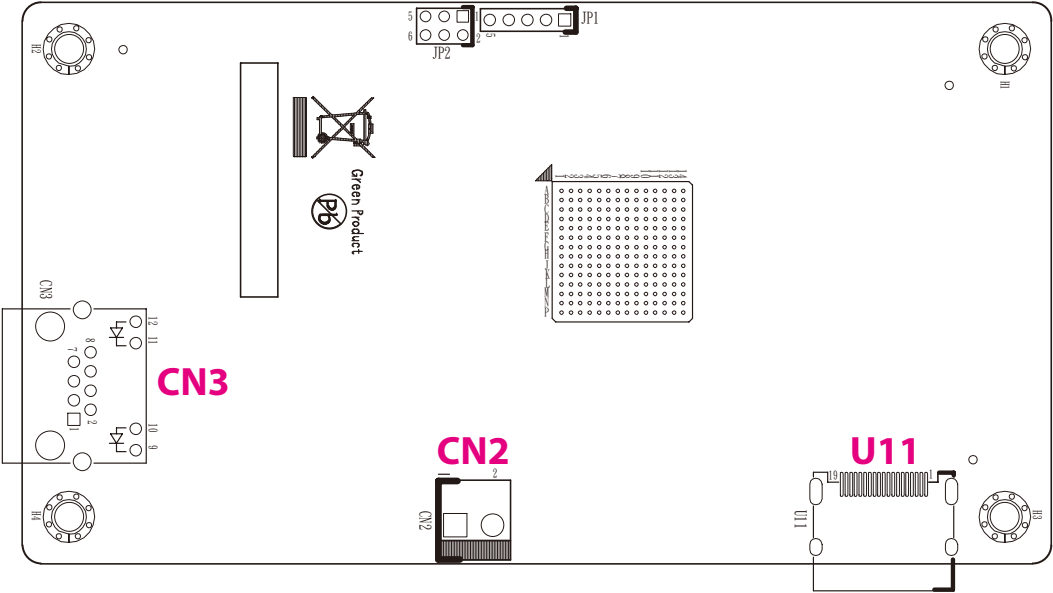
TX Board
Connector Table

Connector	Definition
CN2	DC 5V Input
CN3	CAT 5 TX Port for Video Extended
U11	HDMI Input Port

Location of the Jumpers and Connectors for TPPD 2200 RX Board

Top View

LAN 2

LAN 1

CN1

U15

Bottom View
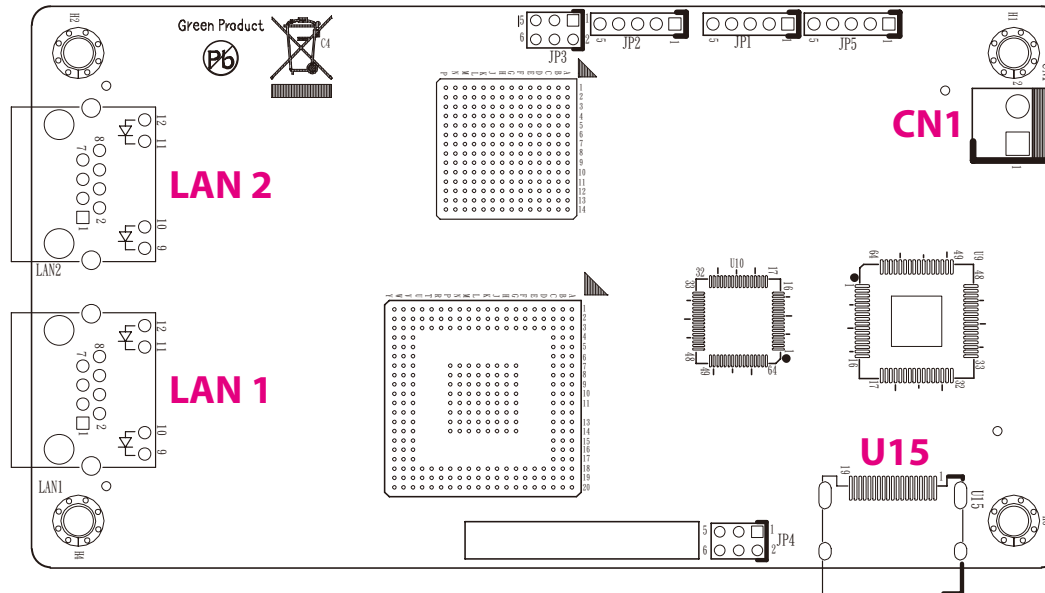
RX Board
Connector Table

Connector	Definition
CN1	DC 5V Input
LAN1	CAT 5 RX Port for Receive TX Signal
LAN2	CAT 5 TX Port for Video Extended
U15	HDMI Input Port

Location of the Jumpers and Connectors for TPPD 2200 AD Board

Top View
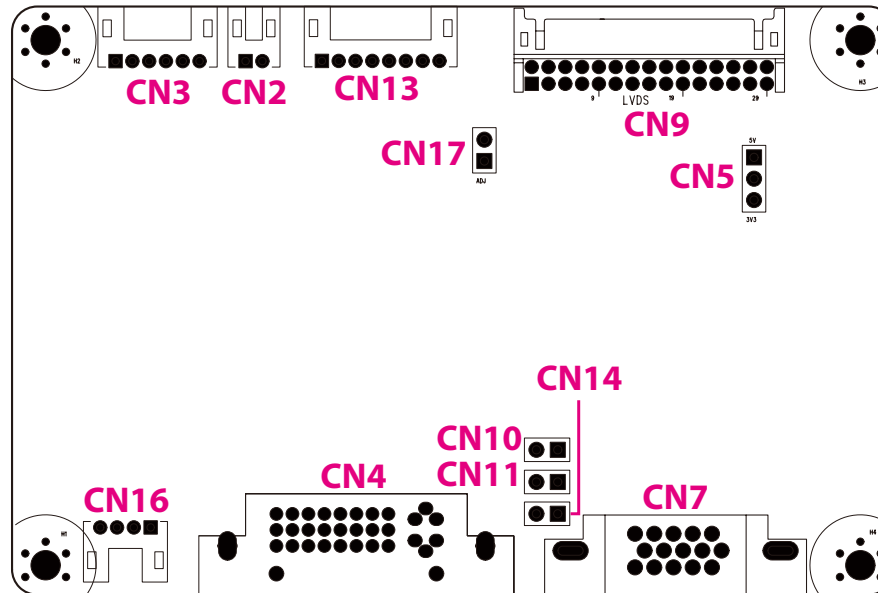
Jumpers

Backlight Adjust

Connector type: 1x2 2-pin header, 2.54mm pitch
Connector location: CN17

1 ▢ ◯ 2

Pin	Status	Settings
1-2	Short	DC Adjust
1-2	Open	PWM Adjust

Panel VCC Select

Connector type: 1x3 3-pin header, 2.54mm pitch
Connector location: CN5

1 ▢ ◯ ◯ 3

Pin	Status	Settings
1-2	Short	Panel VCC 5V IN
2-3	Short	Panel VCC 3.3V IN

Panel Number Select

Connector type: 1x2 2-pin header, 2.54mm pitch
Connector location: CN10, CN11 and CN14

2 ◯ ☐ 1 **CN10**
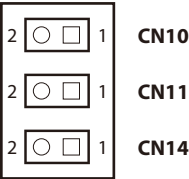
2 ◯ ☐ 1 **CN11**

2 ◯ ☐ 1 **CN14**

No.	Panel Jumper, X: Location to set the jumper on (short)			Pin
	CN10 (Panel1)	**CN11 (Panel2)**	**CN14 (Panel3)**	
1				
2			X	Short pin 1-2 on CN14
3		X		Short pin 1-2 on CN11
4		X	X	Short pin 1-2 on CN11 and CN14
5	X			Short pin 1-2 on CN10
6	X		X	Short pin 1-2 on CN10 and CN14
7	X	X		Short pin 1-2 on CN10 and CN11
8	X	X	X	Short pin 1-2 on CN10, CN11 and CN14

Connector Pin Definitions

DC Power Input (12V ~ 24V)

Connector type: 1x4 4-pin header, 2.0mm pitch
Connector location: CN16
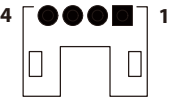
Pin	Definition	Pin	Definition
1	12V	2	12V
3	GND	4	GND

DC Power Output (5V)

Connector type: 1x2 2-pin header, 2.0mm pitch
Connector location: CN2
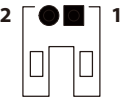
Pin	Definition
1	GND
2	5V

Backlight Power and Signal Output

Connector type: 1x6 6-pin header, 2.0mm pitch
Connector location: CN3

LVDS Connector

Connector type: 2x15 30-pin header, 2.0mm pitch
Connector location: CN9
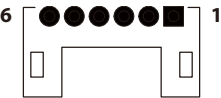
Pin	Definition	Pin	Definition
1	12V	2	12V
3	GND	4	GND
5	BL ON/OFF	6	BL ADJ
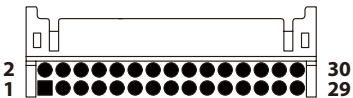
Pin	Definition	Pin	Definition
1	RXO0-	2	RXO0+
3	RXO1-	4	RXO1+
5	RXO2-	6	RXO2+
7	GND	8	GND
9	RXOC-	10	RXOC+
11	RXO3-	12	RXO3+
13	RXE0-	14	RXE0+
15	RXE1-	16	RXE1+
17	RXE2-	18	RXE2+
19	GND	20	GND
21	RXEC-	22	RXEC+
23	RXE3-	24	RXE3+
25	GND	26	GND
27	GND	28	VSEL
29	VSEL	30	VSEL

Keypad Input

Connector type: 1x8 8-pin header, 2.0mm pitch
Connector location: CN13
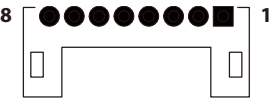
Pin	Definition	Pin	Definition
1	GND	2	LED R (Red)
3	LED G (GREEN)	4	Key 1 (On/Off)
5	Key 2 (Down)	6	Key 3 (Menu)
7	Key 4 (Up)	8	Key 5 (Auto/Exit)

VGA Connector

Connector type: VGA
Connector location: CN7
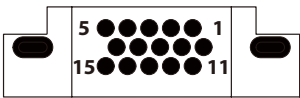
Pin	Definition	Pin	Definition
1	VGA_Rin	2	VGA_Gin
3	VGA_Bin	4	NC
5	VGA_DET	6	GND
7	GND	8	GND
9	VGA_5V	10	GND
11	NC	12	VGA_SDA
13	HS_VGA	14	VS_VGA
15	VGA_SCL		

DVI Connector

Connector type: DVI
Connector location: CN4
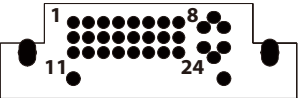
Pin	Definition	Pin	Definition
1	RX2-	2	RX2+
3	GND	4	RX4-
5	RX4+	6	SCL
7	SDA	8	VS
9	RX1-	10	RX1+
11	GND	12	RX3-
13	RX3+	14	5V
15	GND	16	HP
17	RX0-	18	RX0+
19	GND	20	RX5-
21	RX5+	22	GND
23	RXC+	24	RXC-

Chapter 3: System Setup

Removing the Chassis Cover

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

1. Remove the mounting screws around the chassis cover and then remove the cover.

2. Align the mounting holes that are on the sides of the SATA drive with the mounting holes on the drive bay and then use the provided mounting screws to secure the drive in place.
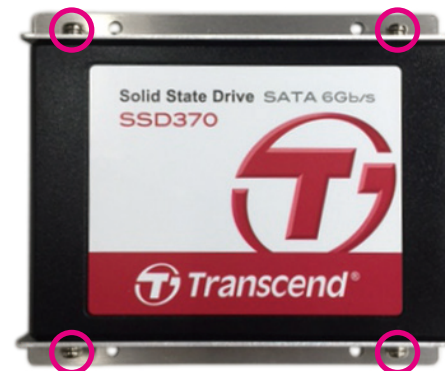
3. Place the SATA drive in the chassis and then use the provided mounting screws to secure the drive in the chassis.

   Connect the SATA data cable and SATA power cable to the connectors on the SATA drive.
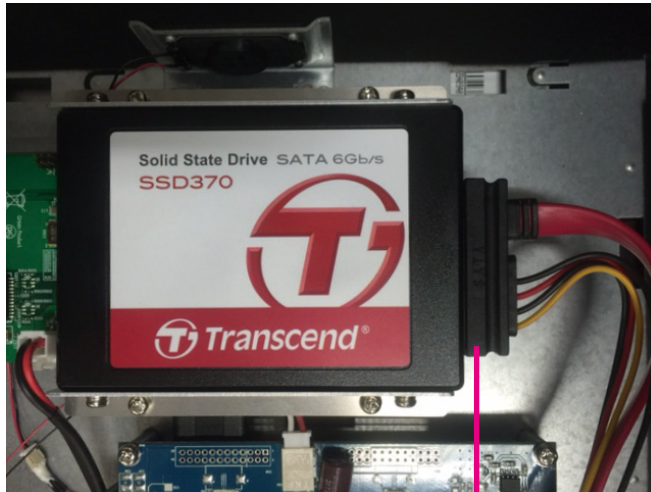
**SATA data &
power connector**

Installing a SO-DIMM Memory Module

1. Insert the module into the socket at an approximately 30 degrees angle. Apply firm even pressure to each end of the module until it slips into the socket. The gold-plated connector on the edge of the module will almost completely disappear inside the socket.

2. Push the module down until the clips on both sides of the socket lock into position. You will hear a distinctive "click" sound, indicating the module is correctly locked into position.
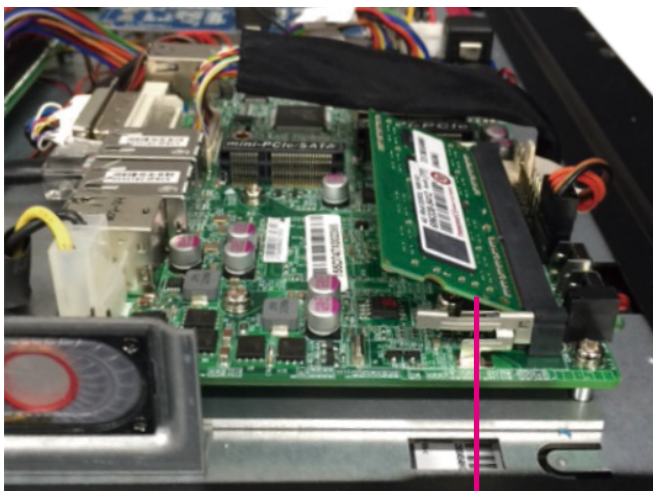
Memory module

Installing a Mini PCIe Module (Optional)

1. The Mini PCIe module package includes the following items.

Mini PCIe Module

Antennas

RF Cables

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

3. Secure the module with mounting screws.
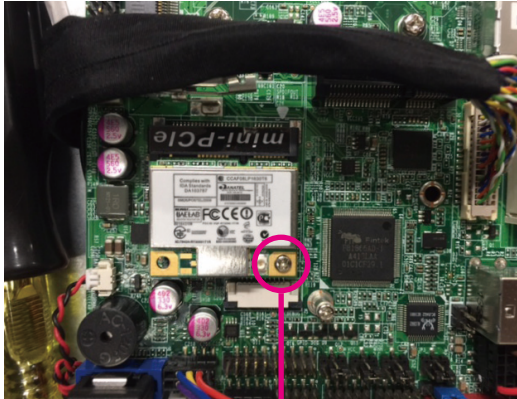
4. Attach one end of the RF cables onto the module.

Mounting screw
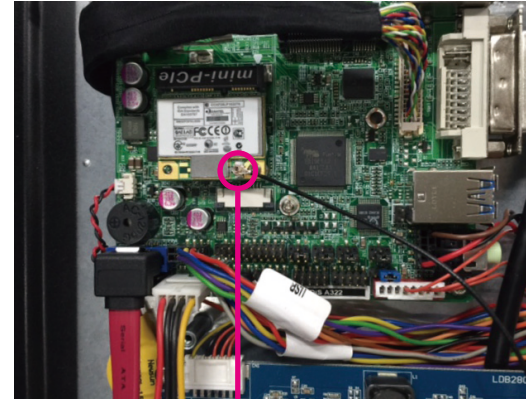
RF cable

5. Insert the antenna jack end of the cable through the antenna hole.
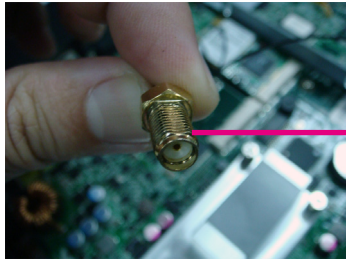
**Antenna jack
end of the cable**

6. Insert the ring onto the antenna jack end of the cable.

Antenna jack

Ring
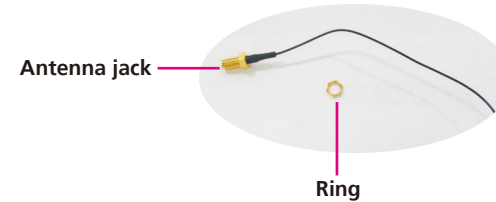
Installing VESA Mount (Optional)

1. For VESA mounting, align the mounting holes on the VESA mount bracket to the mounting holes on the back cover.
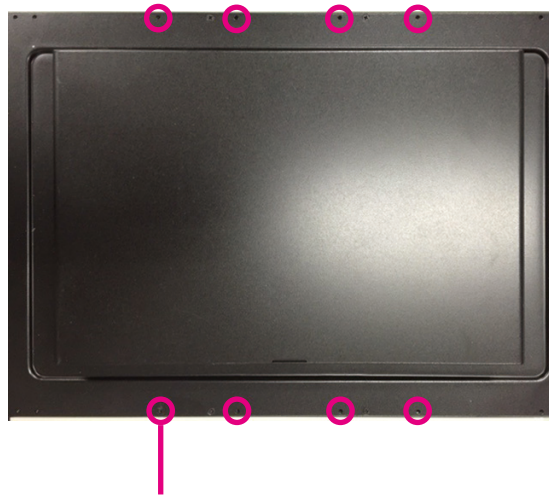
Mounting hole
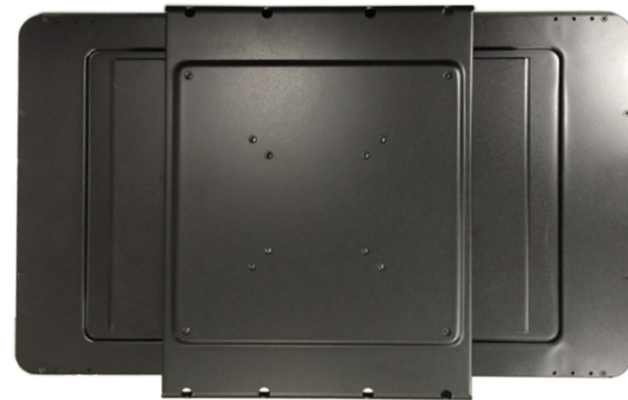
2. Secure the VESA mount bracket to the back cover with screws.

CHAPTER 4: BIOS SETUP

This chapter describes how to use the BIOS setup program for the TPPC 2210 and TPPD 2200 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 Web site 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.

System Date

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

System Time

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

```
         Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
  Main    Advanced   Chipset   Security      Boot     Save & Exit

  BIOS Information                                    Set the Date. Use Tab to switch
  BIOS Vendor              American Megatrends        between Date elements.
  Core Version             5.009
  Filename                 BF3ASSE3
  Build Date and Time      08/04/2015 18:25:36

  System Date              [Fri 10/16/2015]
  System Time              [16:20:36]

  Access Level             Administrator


  TXE Information
  TXE FW Version           01.01.00.1089              →←: Select Screen
                                                      ↑↓: Select Item
                                                      Enter: Select
                                                      +/-: Change Opt.
                                                      F1: General Help
                                                      F2: Previous Values
                                                      F3: Optimized Defaults
                                                      F4: Save & Exit
                                                      ESC: Exit



         Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

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.
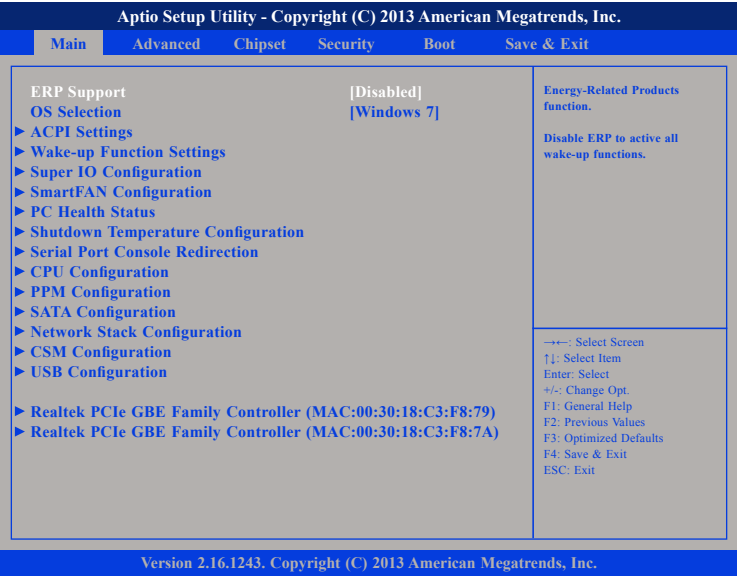
ERP Function
Set this option to Disabled to activate all wake-up functions. The available options are Auto and Disabled.

OS Selection
Selects the operating system as Windows 7 or Windows 8.X.

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
   Main      Advanced    Chipset    Security     Boot     Save & Exit

  ERP Support                      [Disabled]          Energy-Related Products
   OS Selection                    [Windows 7]         function.
 ▶ ACPI Settings
 ▶ Wake-up Function Settings                           Disable ERP to active all
 ▶ Super IO Configuration                              wake-up functions.
 ▶ SmartFAN Configuration
 ▶ PC Health Status
 ▶ Shutdown Temperature Configuration
 ▶ Serial Port Console Redirection
 ▶ CPU Configuration
 ▶ PPM Configuration
 ▶ SATA Configuration
 ▶ Network Stack Configuration
 ▶ CSM Configuration                                  →←: Select Screen
 ▶ USB Configuration                                  ↑↓: Select Item
                                                       Enter: Select
                                                       +/-: Change Opt.
 ▶ Realtek PCIe GBE Family Controller (MAC:00:30:18:C3:F8:79)   F1: General Help
 ▶ Realtek PCIe GBE Family Controller (MAC:00:30:18:C3:F8:7A)   F2: Previous Values
                                                       F3: Optimized Defaults
                                                       F4: Save & Exit
                                                       ESC: Exit


              Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

ACPI Settings

This section is used to configure ACPI Settings.

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
        Advanced

    ACPI Settings                                              Select the highest ACPI sleep
                                                               state the system will enter
    ACPI Sleep State                  [S3 (Suspend to RAM)]    when the SUSPEND button is
                                                               pressed.




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


              Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

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).

Wake-up Function Settings

This section is used to enable or disable system wake-up functions.

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
        Advanced

    Wake system with Fixed Time        [Disabled]             Enable or disable System wake
    PS2 KB/MS Wake-up                  [Disabled]             on alarm event. When enabled,
                                                              System will wake on the
                                                              hr:min:sec specified




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


              Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

Wake system with Fixed Time

This section is used to enable or disable system wake on alarm event. When enabled, system will wake on the HR:MIN:SEC specified.

PS2 KB/MS Wake-up

This section is used to enable or disable system wake on PS2 keyboard or mouse from S3/S4/S5 state.

Super IO Configuration

This section is used to configure serial ports 1 to 4 of the super IO.

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
              Advanced

   Super IO Configuration                          Set Parameters of Serial Port
 ▶ Serial Port 1 Configuration                     1 (COMA)
 ▶ Serial Port 2 Configuration
 ▶ Serial Port 3 Configuration
 ▶ Serial Port 4 Configuration
   OS Select For Serial Port        [Windows]

   WatchDog Timer                   [Disabled]
   WatchDog Wake-up Timer in ERP    [Disabled]

   ATX Power Emulate AT Power       -Enabled-

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



              Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

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

OS Select for Serial Port
Configures which operating system to enable serial port support.

Case Open Detect
Enables or disables case open detection feature.

WatchDog Timer
Enables or disables watchdog timer control. When enabled, the following sub-menus are available:

WatchDog Timer Value
Configures the watchdog timer value.

WatchDog Timer Unit
Configures the metrics used for the watchdog timer.

WatchDog Wake-up Timer in ERP
Enables or disables watchdog wake-up timer when ERP function is disabled.

Serial Port 1 Configuration

Serial Port 2 Configuration

Change Settings
Selects an optimal setting for the Super IO device.

Transmission Mode Select
Configures the serial port mode to RS232, RS422 or RS485.

Mode Speed Select
Configures the speed of the serial port modes.

Serial Port FIFO Mode
The options are 16-Byte FIF0, 32-Byte FIF0, 64-Byte FIF0 and 128-Byte FIF0.

Change Settings
Selects an optimal setting for the Super IO device.

Serial Port FIFO Mode
The options are 16-Byte FIF0, 32-Byte FIF0, 64-Byte FIF0 and 128-Byte FIF0.

Serial Port 3 Configuration

```
            Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
      Advanced

   Serial Port 3 Configuration                                  Enable or Disable Serial Port
                                                                (COM)
   Serial Port                          [Enabled]
   Device Settings                      IO=3E8h; IRQ=10;

   Change Settings                      [Auto]
   Serial Port FIFO Mode                [128-Byte FIFO]




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


            Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

Change Settings
Selects an optimal setting for the Super IO device.

Serial Port FIFO Mode
The options are 16-Byte FIF0, 32-Byte FIF0, 64-Byte FIF0 and 128-Byte FIF0.

Serial Port 4 Configuration

```
            Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
      Advanced

   Serial Port 4 Configuration                                  Enable or Disable Serial Port
                                                                (COM)
   Serial Port                          [Enabled]
   Device Settings                      IO=2E8h; IRQ=10;

   Change Settings                      [Auto]
   Serial Port FIFO Mode                [128-Byte FIFO]




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


            Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

Change Settings
Selects an optimal setting for the Super IO device.

Serial Port FIFO Mode
The options are 16-Byte FIF0, 32-Byte FIF0, 64-Byte FIF0 and 128-Byte FIF0.

SmartFAN Configuration

This section is used to configure the fan settings.

```
            Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
       Advanced

   SmartFAN Configuration
   CPUFAN Type                       [3-Pin]
   CPUFAN Smart Mode                 [Enabled]
   CPUFAN Full-Speed Temperature     75
   CPUFAN Full-Speed Duty            100
   CPUFAN Idle-Speed Temperature     40
   CPUFAN Idle-Speed Duty            40

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

            Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

CPUFAN Type
Configures the CPU fan type to 3-pin or 4-pin.

CPUFAN Smart Mode
Enables of disables CPU fan smart mode. When enabled, the following sub-menus are available:

CPUFan Full-Speed Temperature
Configures the temperature threshold of full speed. Fan will activate at full speed when temperature threshold is exceeded.

CPUFan Full-Speed Duty
Configures the pre-set duty threshold of full speed. Fan will activate at full speed when the pre-set duty is exceeded.

CPUFan Idle-Speed Temperature
Configures the temperature threshold of idle speed. Fan will activate at idle speed when the temperature is below the threshold.

CPUFan Idle-Speed Duty
Configures the pre-set duty threshold of idle speed. Fan will activate at idle speed when the pre-set duty is below the threshold.

PC Health Status

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

CPU Temperature
Detects and displays the current CPU temperature.

System Temperature
Detects and displays the current system temperature.

CPUFAN Speed
Detects and displays the CPU fan speed.

VCORE to VBAT
Detects and displays the output voltages.

Shutdown Temperature Configuration

This section is used to configure the temperature to shutdown the system.

Shutdown Temperature
Sets the temperature to shutdown the system.

Serial Port Console Redirection

This section is used to configure serial port console redirection settings.

```
        Aptio Setup Utility - Copyright (C) 2013 America Megatrends, Inc.
          Advanced

                                                    Console Redirection Enable
                                                    or Disable
       COM1
       Console Redirection              [Disabled]
     ▶ Console Redirection Settings

       Serial Port for Out-of-Band Management/
       Windows Emergency Management Services (EMS)
       Console Redirection              [Disabled]
     ▶ Console Redirection Settings
                                                    →←: Select Screen
                                                    ↑↓: Select Item
                                                    Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F3: Optimized Defaults
                                                    F4: Save & Exit
                                                    ESC: Exit


           Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

Console Redirection

Enables or disables the console redirection. When enabled, Console Redirection Settings will be available.

Console Redirection (Serial Port for Out-of-Band Management)

Enables or disables the console redirection. When enabled, Console Redirection Settings will be available.

Console Redirection Settings

Specifies how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

```
        Aptio Setup Utility - Copyright (C) 2013 America Megatrends, Inc.
            Advanced

       COM1                                         Emulation: ANSI: Extended
       Console Redirection Settings                 ASCII char set. VT100: ASCII
                                                    char set. VT100+: Extends
                                                    VT100 to support color, function
       Terminal Type               [ANSI]           keys, etc.
       Bits per second             [115200]         VT-UTF8: Uses UTF8 encoding
       Data Bits                   [8]              to map Unicode chars onto 1 or
       Parity                      [None]           more bytes.
       Stop Bits                   [1]
       Flow Control                [None]
       VT-UTF8 Combo Key Sup       [Enabled]
       Recorder Mode               [Disabled]
       Resolution 100x31           [Disabled]
       Legacy OS Redirection Resolution [80x24]      →←: Select Screen
       Putty KeyPad                [VT100]           ↑↓: Select Item
       Redirection After BIOS POST [Always Enable]   Enter: Select
                                                    +/-: Change Opt.
                                                    F1: General Help
                                                    F2: Previous Values
                                                    F3: Optimized Defaults
                                                    F4: Save & Exit
                                                    ESC: Exit


           Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```
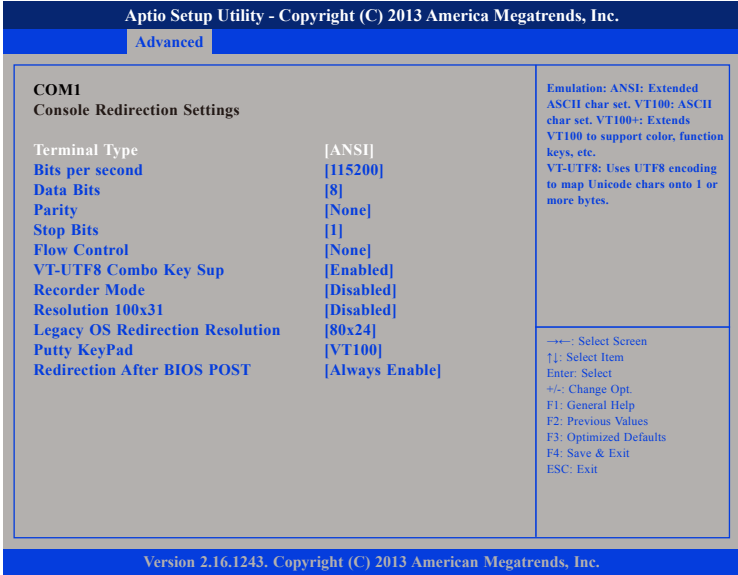
Terminal Type

ANSI   Extended ASCII character set.
VT100   ASCII character set.
VT100+   Extends VT100 to support color, function keys, etc.
VT-UTF8   Uses UTF8 encoding to map Unicode characters onto 1 or more bytes.

Bits Per Second
Selects the serial port transmission speed. The speed must match the other side. Long or noisy lines may require a lower speed.

Data Bits
The options are 7 and 8.

Parity
A parity bit can be sent with the data bits to detect some transmission erros.

Even   Parity bit is 0 if the number of 1's in the data bits is even.
Odd   Parity bit is 0 if number of 1's in the data bits is odd.

Stop Bits
Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.

Flow Control
Flow control can prevent data loss from buffer overflow. When sending data and the receiving buffers are full, a "stop" signal can be sent to stop the data flow.

VT-UTF8 Combo Key Support
Enables or disables VT-UTF8 combination key support for ANSI/VT100 terminals.

Recorder Mode
When this field is enabled, only text will be sent. This is to capture the terminal data.

Resolution 100x31
Enables or disables extended terminal resolution.

Legacy OS Redirection Resolution
Selects the number of rows and columns that support redirection.

Putty KeyPad
Selects the Putty keyboard emulation type.

Redirection After BIOS POST
The settings specify if BootLoader is selected, then Legacy console redirection is disabled before booting to Legacy OS. Default value is Always Enable which means Legacy Console Redirection is enabled for Legacy OS.

Console Redirection Settings (Serial Port for Out-of-Band Management)

Specifies how the host computer and the remote computer (which the user is using) will exchange data. Both computers should have the same or compatible settings.

```
            Aptio Setup Utility - Copyright (C) 2013 America Megatrends, Inc.
               Advanced

   Out-of-Band Mgmt Port          COM1              Emulation: ANSI: Extended
   Terminal Type                  [VT-UTF8]         ASCII char set. VT100: ASCII
   Bits per second                [115200]          char set. VT100+: Extends
                                                    VT100 to support color, function
   Flow Control                   [None]            keys, etc.
   Data Bits                      8                 VT-UTF8: Uses UTF8 encoding
   Parity                         None              to map Unicode chars onto 1 or
   Stop Bits                      1                 more bytes.




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



          Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

Terminal Type

ANSI   Extended ASCII character set.
VT100   ASCII character set.
VT100+   Extends VT100 to support color, function keys, etc.
VT-UTF8   Uses UTF8 encoding to map Unicode characters onto 1 or more bytes.

Bits Per Second

Selects the serial port transmission speed. The speed must match the other side. Long or noisy lines may require a lower speed.

Flow Control

Flow control can prevent data loss from buffer overflow. When sending data and the receiving buffers are full, a "stop" signal can be sent to stop the data flow.

CPU Configuration

This section is used to configure the CPU.

```
         Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
         Advanced

   CPU Configuration                                  Disabled for Windows XP

   Intel(R) Celeron(R) CPU N2807 @ 1.58GHz
   CPU Signature                    30678
   Microcode Patch                  815
   Max CPU Speed                    1580 MHz
   Min CPU Speed                    500 MHz
   Processor Cores                  2
   Intel HT Technology              Not Supported
   Intel VT-x Technology            Supported

   L1 Data Cache                    24 kB x 2
   L1 Code Cache                    32 kB x 2
   L2 Cache                         1024 kB x 1
   L3 Cache                         Not Present          →←: Select Screen
   64-bit                           Supported            ↑↓: Select Item
                                                         Enter: Select
   Limit CPUID Maximum              [Disabled]           +/-: Change Opt.
   Execute Disable Bit              [Enabled]            F1: General Help
   Hardware Prefetcher              [Enabled]            F2: Previous Values
   Adjacent Cache Line Prefetch     [Enabled]            F3: Optimized Defaults
   Intel Virtualization Technology  [Disabled]           F4: Save & Exit
   Power Technology                 [Energy Efficient]   ESC: Exit


         Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

Limit CPUID Maximum

The CPUID instruction of some newer CPUs will return a value greater than 3. The default is Disabled because this problem does not exist in the Windows series operating systems. If you are using an operating system other than Windows, this problem may occur.

Execute Disable Bit

When this field is set to Disabled, it will force the XD feature flag to always return to 0.

Hardware Prefetcher

Turns on or off the mid level cache (L2) streamer prefetcher.

Adjacent Cache Line Prefetch

Turns on or off prefetching of adjacent cache lines.

Intel® Virtualization Technology

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

Power Technology

Enables or disables the power management features.

CPU PPM Configuration

This section is used to configure the Processor Power Management (PPM) configuration.

```
Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
 Advanced

PPM Configuration                                    Enable/Disable Intel SpeedStep

EIST                          [Enabled]
CPU C state Report            [Enabled]
   Enhanced C state           [Enabled]
Max CPU C-state               [ C7]




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

          Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

EIST
Enables or disables Intel® SpeedStep.

CPU C State Report
Enables or disables CPU C-State report to OS.

Enhanced C State
Enables or disables enhanced C-State.

Max CPU C-state
This option controls the max C-State that the processor will support.

SATA Configuration

This section is used to configure the SATA drives.

```
Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
 Advanced

SATA Configuration                                   Enable / Disable Serial ATA

SATA Port                     [Enabled]

SATA Mode                     [AHCI Mode]
SATA Speed Support            [Gen2]
SATA Port1                    [Enabled]
mSATA/SATA Port2              [Enabled]

SATA Port
TS64GSSD320      (64.0GB)

mSATA                                                →←: Select Screen
Not Present                                          ↑↓: Select Item
                                                     Enter: Select
                                                     +/-: Change Opt.
                                                     F1: General Help
                                                     F2: Previous Values
                                                     F3: Optimized Defaults
                                                     F4: Save & Exit
                                                     ESC: Exit

          Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```
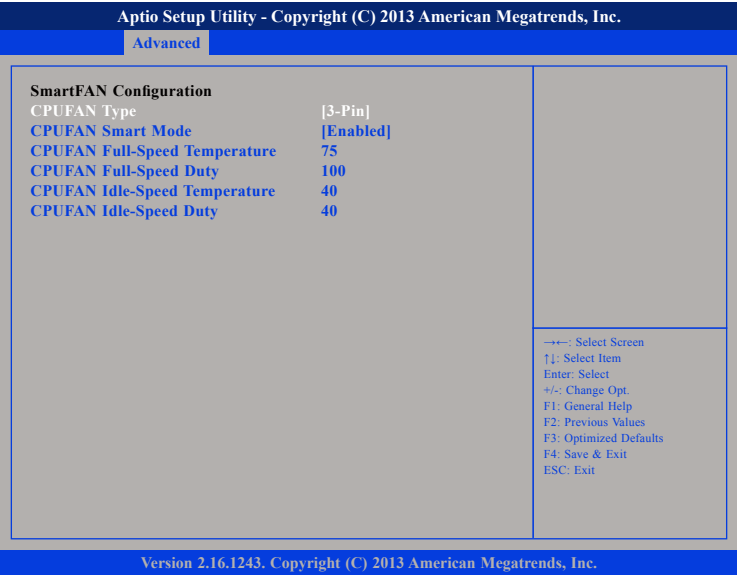
SATA Port
Enables or disables the SATA port.

SATA Mode

IDE   This option configures the Serial ATA drives as Parallel ATA physical storage device.

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

SATA Speed Support
Configures the speed of the SATA controller.

SATA Port1
Enables or disables SATA port1.

mSATA/SATA Port2
Enables or disables mSATA/SATA port2.

Network Stack Configuration

This section is used to configure the network stack settings.
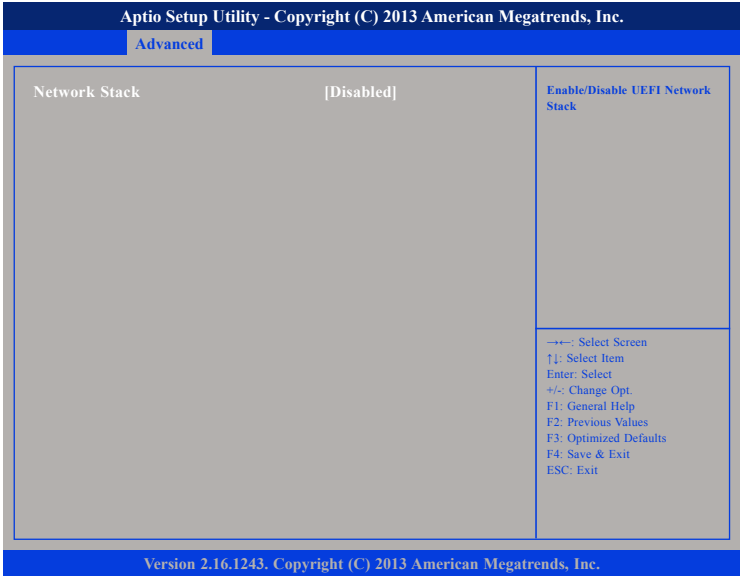
Network Stack
Enables or disables UEFI network stack.

CSM Configuration

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

```
           Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
           Advanced

  Compatibility Support Module Configuration          Set display mode for Option
                                                      ROM
  Option ROM Messages              [Force BIOS]
  INT19 Trap Response              [Immediate]

  Option ROM execution order
  Network                          [Do not launch]
  Storage                          [Legacy only]
  Other PCI devices                [UEFI first]




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


           Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

Option ROM Messages
Selects the display mode for Option ROM. The options are Force BIOS and Keep Current.

INT19 Trap Response
Allows Option ROMs to trap Interrupt 19 when enabled.

Immediate   Execute the trap right away.
Postponed   Execute the trap during legacy boot.

Network
Enables or disables the boot option for legacy network devices.

Storage
Enables or disables the boot option for legacy storage devices.

Other PCI Devices
Enables or disables the boot option for legacy PCI devices.

USB Configuration

This section is used to configure the USB.

```
          Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
               Advanced

       USB Configuration                                  Enables Legacy USB support.
       USB Devices:                                       AUTO option disables legacy
              1 Keyboard, 1 Mouse, 3 Hubs                 support if no USB devices are
                                                          connected. DISABLE option will
       Legacy USB Support               [Enabled]         keep USB devices available
       XHCI Hand-off                    [Enabled]         only for EFI applications.
       EHCI Hand-off                    [Disabled]
       USB Mass Storage Driver Support  [Enabled]

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




            Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

Legacy USB Support

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

XHCI Hand-off

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

EHCI Hand-off

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

Realtek PCIe GbE Family Controller

Displays the driver information of the Ethernet controller 1.

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
   Advanced

   Driver Information
   Driver Name:                    Realtek UEFI UNDI Driver
   Driver Version:                 2.024
   Driver Released Date:           2013/10/15

   Device Information
   Device Name:                    Realtek PCIe GbE Family
   PCI Slot:                       03:00:00
   MAC Address:                    00:30:18:C3:F8:79

   Patent Information
   This product is covered by one or
   US6,570,884, US6,115,776, and US6,
                                                               →←: Select Screen
                                                               ↑↓: Select Item
                                                               Enter: Select
                                                               +/-: Change Opt.
                                                               F1: General Help
                                                               F2: Previous Values
                                                               F3: Optimized Defaults
                                                               F4: Save & Exit
                                                               ESC: Exit

              Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

Realtek PCIe GbE Family Controller

Displays the driver information of the Ethernet controller 2.

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
   Advanced

   Driver Information
   Driver Name:                    Realtek UEFI UNDI Driver
   Driver Version:                 2.024
   Driver Released Date:           2013/10/15

   Device Information
   Device Name:                    Realtek PCIe GbE Family
   PCI Slot:                       04:00:00
   MAC Address:                    00:30:18:C3:F8:7A

   Patent Information
   This product is covered by one or
   US6,570,884, US6,115,776, and US6,
                                                               →←: Select Screen
                                                               ↑↓: Select Item
                                                               Enter: Select
                                                               +/-: Change Opt.
                                                               F1: General Help
                                                               F2: Previous Values
                                                               F3: Optimized Defaults
                                                               F4: Save & Exit
                                                               ESC: Exit

              Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

Chipset

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

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
     Main      Advanced    Chipset    Security     Boot     Save & Exit

  ► North Bridge                                    North Bridge Parameters
  ► South Bridge




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


              Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

North Bridge
Enters the North Bridge submenu.

South Bridge
Enters the South Bridge submenu.

North Bridge

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
                            Chipset

  Memory Information                                Enable : Enable IGD Turbo
  Total Memory                 2048 MB              Enable. Disable: IGD Turbo
  Memory Current Frequency     1333 Mhz             Disable

  Intel IGD Configuration
  IGD Turbo Enable             [Enabled]
  Spread Spectrum clock        [Disabled]

  IGD Boot Type                [LVDS]
  Active LVDS                  [Enabled]
  LVDS Panel Type              [1920x1080 24bit Dual    ]
                                                 →←: Select Screen
                                                 ↑↓: Select Item
                                                 Enter: Select
                                                 +/-: Change Opt.
                                                 F1: General Help
                                                 F2: Previous Values
                                                 F3: Optimized Defaults
                                                 F4: Save & Exit
                                                 ESC: Exit


              Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

IGD Turbo Enable
Enables or disables IGD turbo.

Spread Spectrum Clock
Enables or disables spread spectrum clock.

IGD Boot Type
Selects the video device that will be activated during POST. This will not affect any external graphics that may be present.

Active LVDS
Enables or disables LVDS.

LVDS Panel Type
Configures the LVDS display resolution.

South Bridge

```
► Azalia HD Audio                              Azalia HD Audio Options
► USB Configuration

  MMPE Slot Speed              [Auto]
  MPE Controller               [Enabled]
    Speed                      [Auto]
  Onboard Lan1 Controller      [Enabled]
  Onboard Lan2 Controller      [Enabled]

  Restore AC Power Loss        [Power Off]




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

Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.

MMPE Slot Speed
Configures the MMPE slot speed. The options are Auto, Gen2 and Gen1.

MPE Controller
Enables or disables the MPE controller.

Speed
Configures the MPE controller speed.

Onboard Lan1 to Lan2 Controller
Enables or disables the onboard Lan1 or Lan2 controller.

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

Azalia HD Audio

Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.	
Chipset	

```
Audio Configuration                            Control Detection of the Azalia
                                               device.
Audio Controller             [Enabled]         Disabled = Azalia will be
  Azalia HDMI Codec          [Enabled]         unconditionally disabled
                                               Enabled = Azalia will be
                                               unconditionally Enabled
                                               Auto = Azalia will be enabled if
                                               present disabled otherwise.




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

Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.

Azalia
Control detection of the Azalia device.

Disabled   Azalia will be unconditionally Disabled.
Enabled   Azalia will be unconditionally Enabled.

Azalia HDMI Codec
Enables or disables internal HDMI codec for Azalia.

USB Configuration

```
         Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
                              Chipset

   USB Configuration                                    Control the USB 3.0 functions
   USB 3.0 Support                    [Auto]
   USB 3.0 Link Power Management      [Enabled]

   USB 2.0 Support                    [Disabled]




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


         Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

USB 3.0 Support
Enables or disables the USB 3.0 controller.

USB 3.0 Link Power Management
Enables or disables USB 3.0 link power management.

Security

```
         Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
    Main     Advanced    Chipset    Security    Boot    Save & Exit

   Password Description                                  Set Administrator Password

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


         Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

Administrator Password
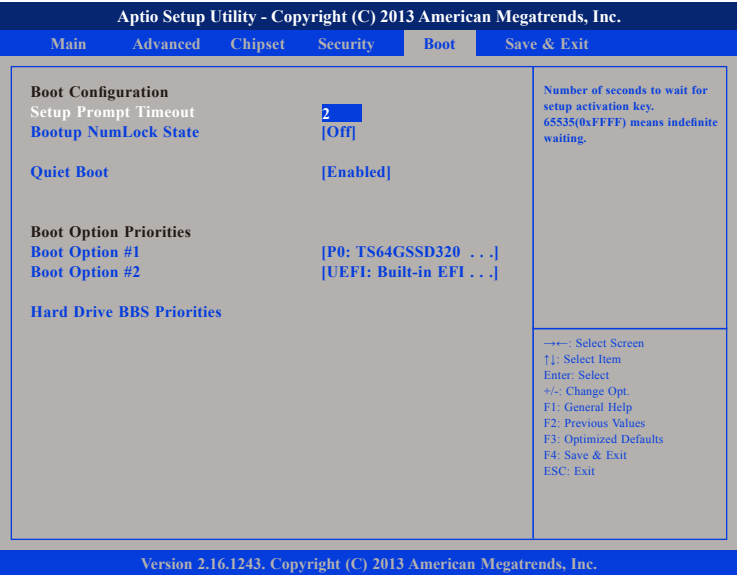Select this to reconfigure the administrator's password.

User Password
Select this to reconfigure the user's password.

Boot

This section is used to configure the boot features.

```
              Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
    Main      Advanced    Chipset    Security    Boot     Save & Exit

  Boot Configuration                                      Number of seconds to wait for
  Setup Prompt Timeout           2                        setup activation key.
  Bootup NumLock State           [Off]                    65535(0xFFFF) means indefinite
                                                          waiting.
  Quiet Boot                     [Enabled]


  Boot Option Priorities
  Boot Option #1                 [P0: TS64GSSD320 . . .]
  Boot Option #2                 [UEFI: Built-in EFI . . .]

  Hard Drive BBS Priorities

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


              Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

Setup Prompt Timeout
Selects the number of seconds to wait for the setup activation key. 65535(0xFFFF) denotes indefinite waiting.

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

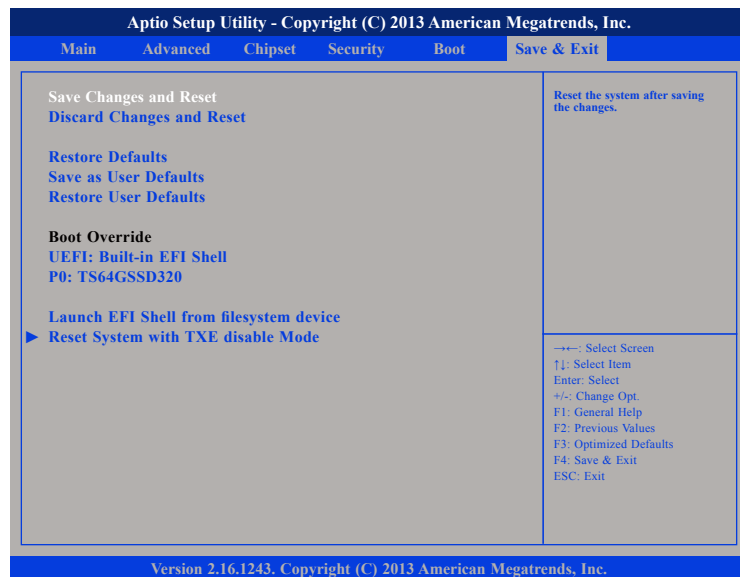| Enabled | Displays OEM logo instead of the POST messages. |
| Disabled | Displays normal POST messages. |

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.

Hard Drive BBS Priorities
Sets the order of the legacy devices in this group.

Save & Exit

```
           Aptio Setup Utility - Copyright (C) 2013 American Megatrends, Inc.
   Main      Advanced    Chipset    Security      Boot    Save & Exit

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

   Restore Defaults
   Save as User Defaults
   Restore User Defaults

   Boot Override
   UEFI: Built-in EFI Shell
   P0: TS64GSSD320

   Launch EFI Shell from filesystem device
 ▶ Reset System with TXE disable Mode
                                                  →←: Select Screen
                                                  ↑↓: Select Item
                                                  Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F3: Optimized Defaults
                                                  F4: Save & Exit
                                                  ESC: Exit


           Version 2.16.1243. Copyright (C) 2013 American Megatrends, Inc.
```

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.

Save as User Defaults

To use the current configurations as user default settings for the BIOS, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

Restore User Defaults

To restore the BIOS to user 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>.

Launch EFI Shell from filesystem device

To launch EFI shell from a filesystem device, select this field and press <Enter>.

Reset System with TXE Disable Mode

To restart the system and boot with TXE disabled, select this field then press <Enter>. A dialog box will appear. Confirm by selecting Yes.

APPENDIX A: WATCHDOG

WDT Device Configuration Registers (LDN CR07)

Watchdog Control Configuration Register 1 - Index F5h

Bit	Name	R/W	Reset	Default	Description
7	Reserved	R	-	0	Reserved
6	WDTMOUT_STS	R/W	5VSB	0	If watchdog timeout event occurred, this bit will be set to 1. Write a 1 to this bit will clear it to 0.
5	WD_EN	R/W	5VSB	0	If this bit is set to 1, the counting of watchdog time is enabled.
4	WD_PULSE	R/W	5VSB	0	Select output mode (0: level, 1: pulse) of RSTOUT# by setting this bit.
3	WD_UNIT	R/W	5VSB	0	Select time unit (0: 1sec, 1: 60 sec) of watchdog timer by setting this bit.
2	WD_HACTIVE	R/W	5VSB	0	Select output polarity of RSTOUT# (1: high active, 0: low active) by setting this bit.
1-0	WD_PSWIDTH	R/W	5VSB	0	Select output pulse width of RSTOUT# 0: 1ms 1: 25ms 2: 125ms 3: 5 sec

Watchdog Timer Configuration Register 2 - Index F6h

Bit	Name	R/W	Reset	Default	Description
7-0	WD_TIME	R/W	5VSB	0	Time of watchdog timer (0 ~ 255)

Watchdog PME Enable Configuration Register 2 - Index FAh

Bit	Name	R/W	Reset	Default	Description
7	WDT_PME	R	5VSB	0	0: No WDT PME occurred. 1: WDT PME occurred. The WDT PME is occurred one unit before WDT timeout.
6	WDT_PME_EN	R/W	5VSB	0	0: Disable Watchdog PME. 1: Enable Watchdog PME.
5	Reserved	R	-	0	Reserved
4	WDT_CLK_SEL	R/W	5VSB	1	WDT Clock Source Select 0: Internal 1KHz clock. 1: 1KHz clock driven by CLKIN.
3-1	Reserved	R	-	0	Reserved
0	WDOUT_EN	R/W	5VSB	0	0: Disable Watchdog time-out output via WDTRST# 1: Enable Watchdog time-out output via WDTRST#