NEXCOM

NEXCOM International Co., Ltd.

Intelligent Platform & Services Business Unit
Embedded Computing (Mini-ITX Motherboard)
NEX 614B
User Manual

www.nexcom.com

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PREFACE

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Acknowledgements

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Regulatory Compliance Statements

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

Declaration of Conformity

FCC

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

CE

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

RoHS Compliance

NEXCOM RoHS Environmental Policy and Status Update

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

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

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

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

How to recognize NEXCOM RoHS Products?

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

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

Warranty and RMA

NEXCOM Warranty Period

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

NEXCOM Return Merchandise Authorization (RMA)

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

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

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

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

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

Repair Service Charges for Out-of-Warranty Products

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

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System Level

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

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

- Replace with 3rd party products if needed.

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

Board Level

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

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

Warnings

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

Cautions

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

Safety Information

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

- Read all instructions carefully.

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

- Follow all warnings and cautions in this manual.

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

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

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

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

Installation Recommendations

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

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

- A Philips screwdriver

- A flat-tipped screwdriver

- A grounding strap

- An anti-static pad

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

Safety Precautions

1. Read these safety instructions carefully.

2. Keep this User Manual for later reference.

3. Disconnect the equipment from any AC outlet before cleaning or installing a component inside the chassis. Use a damp cloth. Do not use liquid or spray detergents for cleaning.

4. To prevent electrostatic build-up, leave the board in its anti-static bag until you are ready to install it.

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

6. Keep the board away from humidity.

7. Put the board on a stable surface. Dropping it or letting it fall may cause damage.

8. Wear anti-static wrist strap.

9. Do all preparation work on a static-free surface.

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

11. Hold the board only by its edges. Be careful not to touch any of the components, contacts or connections.

12. All cautions and warnings on the board should be noted.

13. Use the correct mounting screws and do not over tighten the screws.

14. Keep the original packaging and the anti-static bag; in case the board has to be returned for repair or replacement.

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 NEX 614B package that you received is complete. Your package should have all the items listed in the following table.

Item	Name	Qty
1	NEX 614B motherboard	1
2	I/O panel shield	1

Optional Accessories

Item	Part Number	Name	Description
1	7400060028X00	12V DC Power Adapter	FSP: FSP060-DIBAN2 60W 12V/5A Level VI for McAfee
2	603COM0093X00	COM Port Cable CP: NEX-171109-02	COM Port Cable CP: NEX-171109-02 DB9(M) to IDC 10P PIT:2mm L=250mm
3	603USB0084X00	USB Cable for EBC-355A ST:MD-5606151	USB CON x 2 + Bracket to Dupont 10P PIT:2.0mm 200mm

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Ordering Information

The following below provides ordering information for NEX 614B.

NEX 614B (P/N: 10G00061402X0)

6th/7th Generation Intel® Core™ i7/i5/i3, LGA1151 Socket Processor, Max. 65W TDPs, H110, DDR4 x2, HDMI x2, USB 3.0 x4, USB 2.0 x4, GbE x2, SATA x2, RS232 x2, Mini-PCIe x2, PCIe (x1) x1, 12VDC, 0 ~ 60°C.

Optional

- **12V, 60W power adapter w/o power cord**
  (P/N: 7400060028X00)
- **COM port cable**
  (P/N: 603COM0093X00)
- **USB cable**
  (P/N: 603USB0084X00)
- **SATA cable**
  (P/N: 60233ATA48X00)
- **SATA power cable**
  (P/N: 60233PW168X00)

CHAPTER 1: PRODUCT INTRODUCTION

Overview
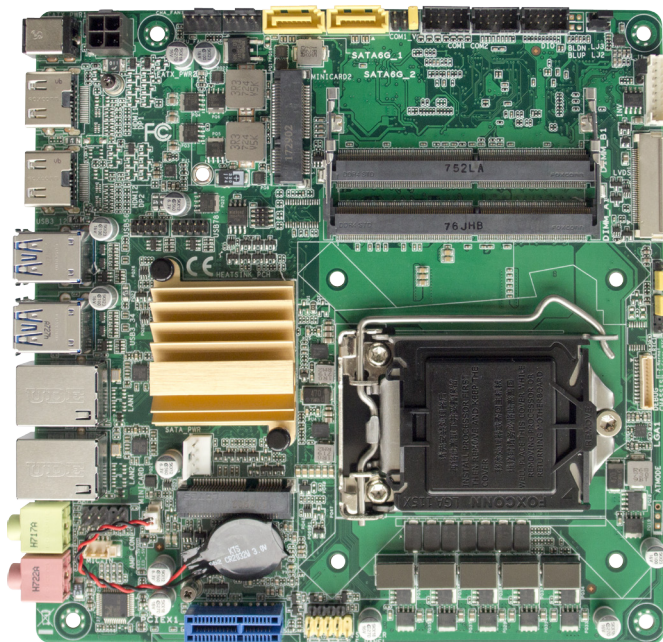
Key Features

- 6th/7th Generation Intel® Core™ i7/i5/i3, LGA1151 Socket Processor, Max. 65W TDPs, LGA1511 and H110

- Support two DDR4 SO-DIMM sockets

- Support multiple displays from two HDMI and LVDS

- 2 x SATA III, 2 x GbE LAN, 2 x COM, 4 x USB 3.0, 4 x USB 2.0, 8-bit DIO, HD Audio, 1 x PCIe 2.0 [X1] and 2 x Mini PCIe

- DC Input +12V

- Low profile system

- Optional: Wi-Fi module/TPM module

Hardware Specifications

CPU Support

▪ 6th/7th Generation Intel® Core™ i7/i5/i3, LGA1151 Socket Processor, Max. 65W TDPs

Display

▪ 2 x HDMI connector
(resolution up to 4096 x 2160 @ 24 Hz / 2560 x 1600 @ 60 Hz)
▪ LVDS connector (resolution up to 1920 x 1080 @ 60Hz)

System

▪ 2 x DDR4 2133 SO-DIMM sockets support up to 32GB, non-ECC
▪ 2 x SATAIII 6Gb/s connector
▪ 1 x SATA power connector
▪ 2 x Realtek RTL8111G PCIe GbE LAN controller
▪ 2 x Dual deck USB 3.0
▪ 2 x USB 2.0 2x5 2.0mm header
▪ 2 x Serial ports:
 - 1 x RS232/485/422 by COM1
 - 1 x RS232 by COM2
▪ 1 x 8-bit DIO header (4-in/4-out)
▪ WDT 1~255 steps by software program
▪ 1 x TPM connector
▪ Support Realtek HD Audio:
 - 2 x HD Audio jack (Line-out, Mic-in)
 - 1 x Speaker out header (4Ω/2W)
 - 1 x Front Panel connector
▪ 1 x DC jack (5.5/2.5mm), 1 x ATX 4-pin power connector

BIOS

▪ 64Mbit Flash ROM x 1, AMI BIOS

Storage Device

▪ 2 x SATA III 6.0Gb/s

Expansion

▪ 1 x PCIe 2.0 [x1] (Gen2)
▪ 2 x Mini PCI Express slots:
 - 1 x Half Size, supports PCIe + USB interface
 - 1 x Full Size, supports mSATA (Default) / (PCIe + USB Optional)

Power Requirements

▪ 12V DC input:
 - DC lockable jack or ATX 4-pin power connector
 - AT/ATX mode select jumper (Optional)

Rear I/O

▪ 1 x DC power jack
▪ 2 x HDMI
▪ 2 x USB 3.0 (double deck)
▪ 2 x GbE controller
▪ 1 x Mic-in
▪ 1 x Line-out

Mechanical & Environment

▪ Operating Temperature: 0°C ~ 60°C
▪ Storage Temperature: -20°C ~ 80°C
▪ Relative humidity: Operating 10%~90%, non-condensing

Dimension

▪ Display Head: Mini-ITX, 6.7" x 6.7" (170mm x 170mm)

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Operating System

- Windows® 10 64-bit
- Windows® 8.1 64-bit
- Windows® 7 32/64-bit
- Linux Fedora

Note: The 7th Generation Intel® Core™ Processors support Windows 10 64-bit only.

Certifications

- EMC & Safety
- CE/FCC Class A

Knowing Your NEX 614B

4-pin EATX Power

CPU Fan

COM1 Ring/+5V/+12V Select

Inverter Backlight Control Mode Select

Chassis Fan

SATA1, SATA2

COM1, COM2

Digital I/O

Inverter Voltage Select

Backlight Inverter Power

Full-size Mini-PCIe (mSATA)

LVDS Panel Voltage Select

Top: LVDS
Bottom: EDP

USB 2.0

DDR4 SO-DIMM

SPI Flash Programmable

Clear RTC RAM

Chassis Intrusion

SATA Power

Battery Connector

Front Panel Audio

Audio Amplifier

Half-size Mini-PCIe (PCIe + USB)

Speaker Connector

PCIe x1

Front System Panel

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Edge I/O View

DC Jack   HDMI   USB 3.0   RJ45 LAN Ports   Line-out   Mic-in

CHAPTER 2: JUMPERS AND CONNECTORS

This chapter describes how to set the jumpers and connectors on the NEX 614B motherboard.

Before You Begin

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

- Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:
  – A Philips screwdriver
  – A flat-tipped screwdriver
  – A set of jewelers screwdrivers
  – A grounding strap
  – An anti-static pad

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

- Before working on internal components, make sure that the power is off. Ground yourself before touching any internal components, by touching a metal object. Static electricity can damage many of the electronic components. Humid environments tend to have less static electricity than dry environments. A grounding strap is warranted whenever danger of static electricity exists.

Precautions

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

Follow the guidelines below to avoid damage to your computer or yourself:
- Always disconnect the unit from the power outlet whenever you are working inside the case.

- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.

- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Don't flex or stress the circuit board.

- Leave all components inside the static-proof packaging that they shipped with until they are ready for installation.

- Use correct screws and do not over tighten screws.

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Jumper Settings

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

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

Two-Pin Jumpers: Open (Left) and Short (Right)
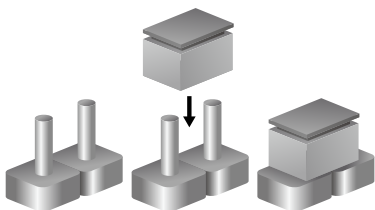
Three-Pin Jumpers: Pins 1 and 2 are Short
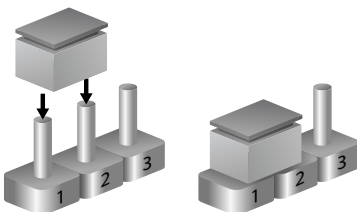
Locations of the Jumpers and Connectors

The figure below shows the location of the jumpers and connectors.
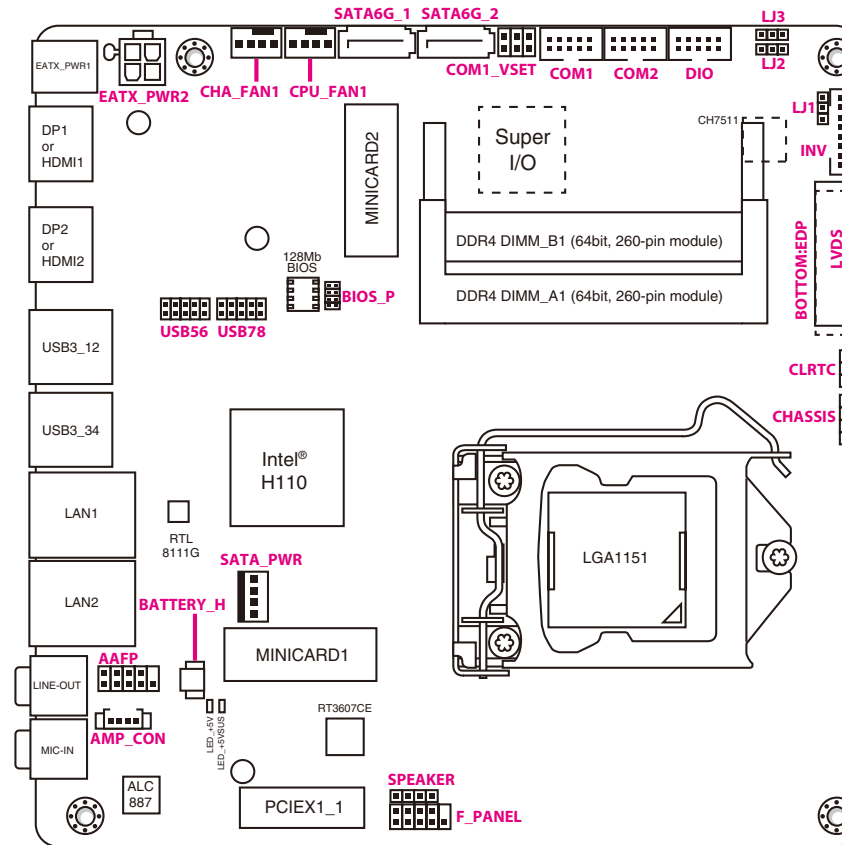
Jumpers

Clear RTC RAM

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

1-2 Short (Default)   **2-3 Short**
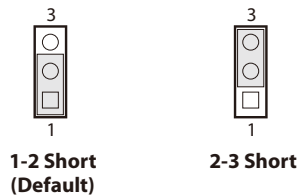
Pin	Status	Definition
1-2	Short	Normal
2-3	Short	Clear CMOS

COM1 Ring/+5V/+12V Selection

Connector type: 2x3 6-pin header
Connector location: COM1_VSET

1-2 Short   **3-4 Short**   **5-6 Short (Default)**
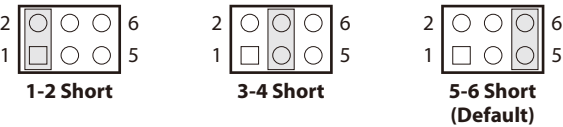
Pin	Status	Definition
1-2	Short	+12V
3-4	Short	+5V
5-6	Short	Ring

LVDS Panel Voltage Select

Connector type: 1x3 3-pin header
Connector location: LJ1

1-2 Short

2-3 Short (Default)
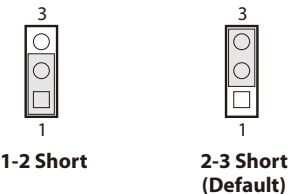
Pin	Status	Definition
1-2	Short	+5V
2-3	Short	+3.3V

Inverter Voltage Select

Connector type: 1x3 3-pin header
Connector location: LJ2

1-2 Short (Default)

2-3 Short

Pin	Status	Settings
1-2	Short	DC Voltage Control
2-3	Short	PWM Control

Inverter Backlight Control Mode Select

Connector type: 1x3 3-pin header
Connector location: LJ3

1-2 Short

2-3 Short (Default)

Pin	Status	Settings
1-2	Short	+12V
2-3	Short	+5V

Chassis Intrusion Jumper

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

3-4 Short (Default)
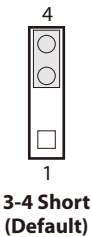
Pin	Status	Settings
1-2	Open	Enables the chassis intrusion detection feature
3-4	Short	Disables the chassis intrusion detection feature

Connector Pin Definitions

Internal Connectors

SATA Power Connector

Connector type: 1x4 4-pin header
Connector location: SATA_PWR
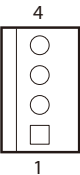
Pin	Definition	Pin	Definition
1	+5V	2	GND
3	GND	4	+12V

Audio Amplifier Connector

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

Pin	Definition	Pin	Definition
1	ROUTP	2	ROUTN
3	LOUTN	4	LOUTP

Chassis Fan Connector

Connector type: 1x4 4-pin header
Connector location: CHA_FAN1

Pin	Definition	Pin	Definition
1	PWM	2	SENSE
3	VCC	4	GND

CPU Fan Connector

Connector type: 1x4 4-pin header
Connector location: CPU_FAN1

Pin	Definition	Pin	Definition
1	PWM	2	SENSE
3	VCC	4	GND

LVDS Connector

Connector type: 1x40 40-pin header
Connector location: LVDS

Embedded DisplayPort

Connector type: 1x40 40-pin header
Connector location: EDP
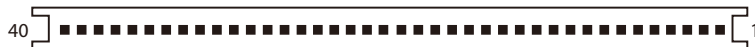
Pin	Definition	Pin	Definition
1	LVDS0_D3+	2	LVDS0_D3-
3	LVDS0_D2+	4	LVDS0_D2-
5	LVDS0_D1+	6	LVDS0_D1-
7	LVDS0_D0+	8	LVDS0_D0-
9	LVDS1_D3+	10	LVDS1_D3-
11	LVDS1_D2+	12	LVDS1_D2-
13	LVDS1_D1+	14	LVDS1_D1-
15	LVDS1_D0+	16	LVDS1_D0-
17	GND	18	+V_PANEL
19	+V_PANEL	20	+V_PANEL
21	NC	22	+3V
23	GND	24	GND
25	GND	26	LVDS0_CLK+
27	LVDS0_CLK-	28	GND
29	GND	30	GND
31	SPC1	32	INV_ENABKL
33	VCON	34	LVDS1_CLK+
35	LVDS1_CLK-	36	+BLVCC
37	+BLVCC	38	+BLVCC
39	NC	40	SPD1

Pin	Definition	Pin	Definition
1	NC	2	GND
3	eDP_TXN3_C	4	eDP_TXP3_C
5	GND	6	eDP_TXN2_C
7	eDP_TXP2_C	8	GND
9	eDP_TXN1_C	10	eDP_TXP1_C
11	GND	12	eDP_TXN0_C
13	eDP_TXP0_C	14	GND
15	eDP_AUXP_C	16	eDP_AUXN_C
17	GND	18	+V_PANEL
19	+V_PANEL	20	+V_PANEL
21	+V_PANEL	22	NC
23	GND	24	GND
25	GND	26	GND
27	eDP_HPD_RRR	28	GND
29	GND	30	GND
31	GND	32	BKLTEN_R
33	BKLTCTL_R	34	NC
35	NC	36	+BLVCC
37	+BLVCC	38	+BLVCC
39	+BLVCC	40	NC

Digital I/O Connector

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

```
2 ⃞ ○ ○ ○ ○ ○  10
1 ⃞ □ ○ ○ ○ ○  9
```
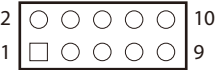
Pin	Definition	Pin	Definition
1	DIO_I#1	2	DIO_I#2
3	DIO_I#3	4	DIO_I#4
5	DIO_O#1	6	DIO_O#2
7	DIO_O#3	8	DIO_O#4
9	+5V	10	GND

System Panel Connector

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

```
2 ⃞ ○ ○ ○ ○  10
1 ⃞ □ ○ ○ ○ ○  9
```
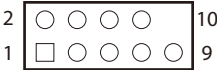
Pin	Definition	Pin	Definition
1	HDD_LED+	2	PWR_LED+
3	HDD_LED-	4	PWR_LED-
5	GND	6	PWRBTN#
7	RSTCON#_PANEL	8	GND
9	NC	10	NA

Serial ATA 6.0Gb/s Connector 1

Connector type: Standard Serial ATA 7P (1.27mm, SATA-M-180)
Connector location: SATA6G_1

Serial ATA 6.0Gb/s Connector 2

Connector type: Standard Serial ATA 7P (1.27mm, SATA-M-180)
Connector location: SATA6G_2
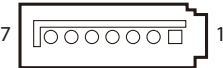
Pin	Definition	Pin	Definition
1	GND	2	RSATA_TXP1
3	RSATA_TXN1	4	GND
5	RSATA_RXN1	6	RSATA_RXP1
7	GND		

Pin	Definition	Pin	Definition
1	GND	2	RSATA_TXP2
3	RSATA_TXN2	4	GND
5	RSATA_RXN2	6	RSATA_RXP2
7	GND		

Speaker Connector

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

USB 2.0 Connectors

Connector type: 2x5 10-pin header
Connector location: USB56 and USB78

Pin	Definition	Pin	Definition
1	+5V	2	GND
3	GND	4	SPKO
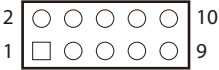
USB56

Pin	Definition	Pin	Definition
1	+5V	2	GND
3	S_USB_PN	4	GND
5	S_USB_PP	6	S_USB_PP
7	GND	8	S_USB_PN
9	GND	10	+5V

USB78

Pin	Definition	Pin	Definition
1	+5V	2	GND
3	S_USB_PN	4	GND
5	S_USB_PP	6	S_USB_PP
7	GND	8	S_USB_PN
9	GND	10	+5V

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SPI Flash Programmable Connector

Connector type: 2x4 8-pin header
Connector location: BIOS_P
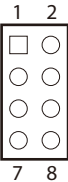
Pin	Definition	Pin	Definition
1	+3V_SPI	2	GND
3	S_SPI_CS1#Q	4	S_SPI_CLK_2Q
5	S_SPI_MISO_2Q	6	S_SPI_MOSI_2Q
7	NC	8	NC

Battery Connector

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

Pin	Definition
1	+BAT
2	GND

Backlight Inverter Power Connector

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

Serial Port Connector (COM1)

Connector type: 2x5 10-pin header
Connector location: COM1

Pin	Definition	Pin	Definition
1	INV_ENABKL	2	VCON
3	+BLVCC	4	+BLVCC
5	GND	6	GND
7	BLUP#_R	8	BLDN#_R
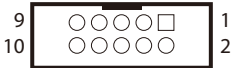
RS-232

Pin	Definition	Pin	Definition
1	DCD	2	RXD1
3	TXD	4	DTR1
5	GND	6	DSR1
7	RTS1	8	CTS1
9	RI1_F_VCC	10	NC

RS-422 and RS-485 (Only COM1 supports RS-422 and RS-485)

Pin	Definition	Pin	Definition
1	422TXD-/485DATA-	2	422RXD+
3	422TXD+/485DATA+	4	422RXD-
5	GND	6	DSR
7	RTS	8	CTS
9	RI/+12V/+5V	10	NC

Serial Port Connector (COM2)

Connector type: 2x5 10-pin header
Connector location: COM2

4-pin DC-In Power Connector

Connector type: 2x2 4-pin header
Connector location: EATX_PWR2
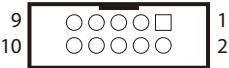
Pin	Definition	Pin	Definition
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI1_F_VCC	10	NC
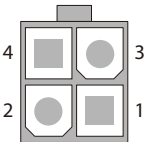
Pin	Definition	Pin	Definition
1	GND	2	GND
3	DC_IN	4	DC_IN

Note:
DC JACK SPEC max + 12V / 7A. It is preferred that EATX_PWR2 is used when using a 65W CPU.

Front Panel Audio Connector

Connector type: 2x5 10-pin header
Connector location: AAFP
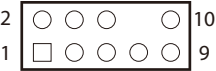
HD Audio Compliant Pin Definition

Pin	Definition	Pin	Definition
1	PORT1 L	2	AGND
3	PORT1 R	4	NC
5	PORT2 R	6	SENSE1_RETUR
7	SENSE_SEND	8	NC
9	PORT2 L	10	SENSE2_RETUR

Legacy AC'97 Compliant Pin Definition

Pin	Definition	Pin	Definition
1	MIC2	2	AGND
3	MICPWR	4	NC
5	NC	6	NC
7	Line out_R	8	NC
9	Line out_L	10	NC

Block Diagram
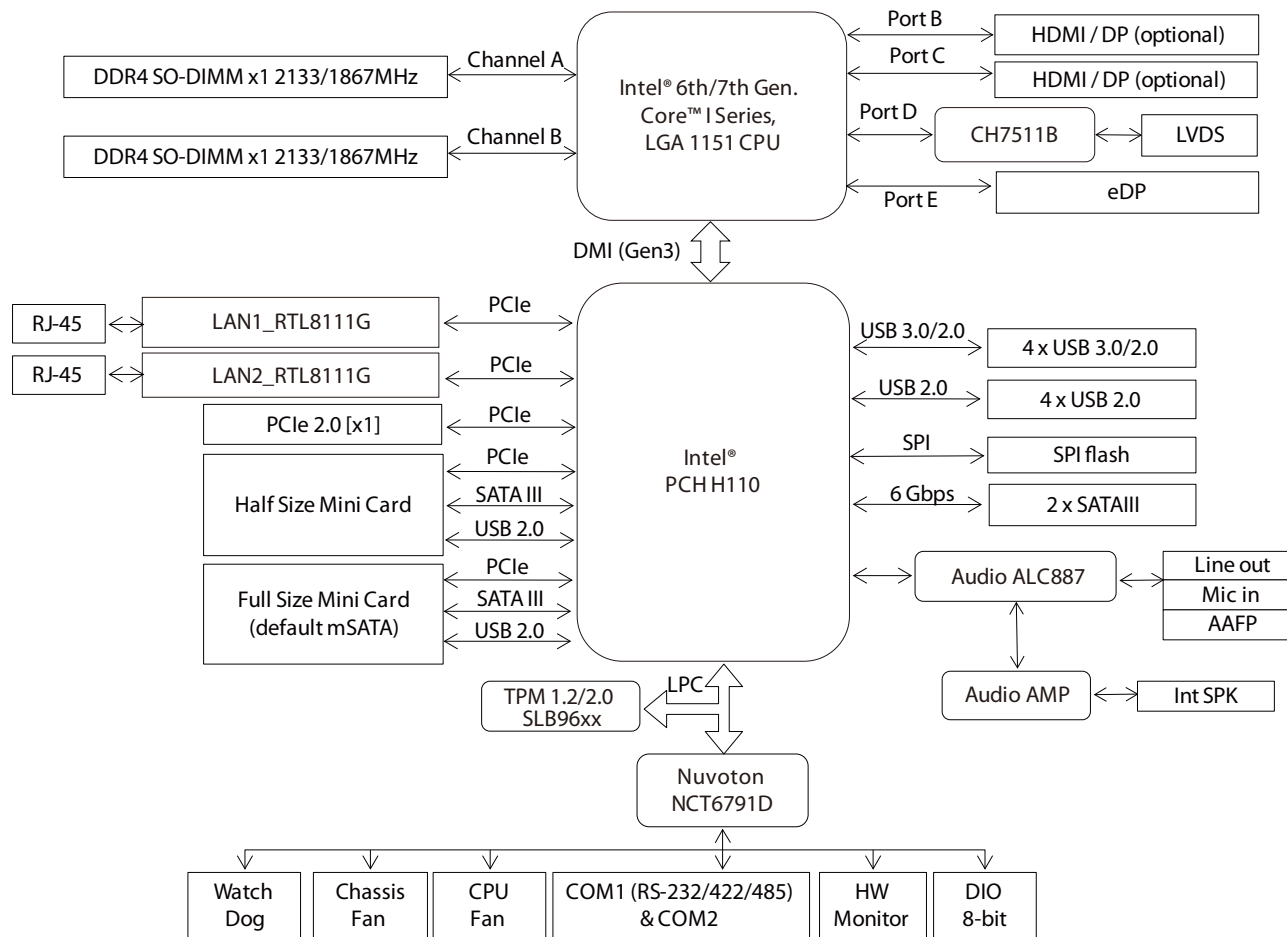
CHAPTER 3: BIOS SETUP

This chapter describes how to use the BIOS setup program for NEX 614B. The BIOS screens provided in this chapter are for reference only and may change if the BIOS is updated in the future.

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

About BIOS Setup

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

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

With easy-to-use pull down menus, you can configure such items as:
- Hard drives, diskette drives, and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power management features

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

When to Configure the BIOS

This program should be executed under the following conditions:

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

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

Default Configuration

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

Entering Setup

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

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

- If the error occurs after the display device is initialized, the screen will display the error message.

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

Press the [Del] key to enter Setup:

Legends

Key	Function
← →	Moves the highlight left or right to select a menu.
↑ ↓	Moves the highlight up or down between sub-menu 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) 2017 American Megatrends, Inc.
    Main      Advanced    Chipset    Security      Boot      Save & Exit

   BIOS Information                                            Set the Date. Use Tab to switch
        R1.6 (EHB0AM16) (03/31/2017)                          between Date elements.

   BIOS Vendor                   American Megatrends
   Compliancy                    UEFI 2.4; PI 1.3

   System Date                   [Sat 01/28/2017]
   System Time                   [00:10:20]

   Access Level                  Administrator

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

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```

Advanced

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

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

```
                Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
     Main      Advanced      Chipset      Security      Boot      Save & Exit

     Case Open Warning              [Disabled]              Case Open detecting function
     Chassis Opened                 [No]

  ►  CPU Configuration
  ►  SATA Configuration
  ►  USB Configuration
  ►  PCH-FW Configuration
  ►  SIO Configuration
  ►  Hardware Monitor

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

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```

Case Open Warning

Enables or disables case open warning detection function.

CPU Configuration

This section is used to configure the CPU settings.

```
                Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
     Advanced

     CPU Configuration                                     Enabled for Windows XP and
                                                           Linux (OS optimized for
     Intel(R) Core(TM) i7-6700 CPU @ 3.40GHz               Hyper-Threading Technology)
     CPU Signature                  506E3                  and Disabled for other OS (OS
     Microcode Patch                A6                     not optimized for
     Max CPU Speed                  3400 MHz               Hyper-Threading Technology).
     Min CPU Speed                  800 MHz                When Disabled only one thread
     Processor Cores                4                      per enabled core is enabled.
     64-bit                         Supported
     Hyper Threading Technology     Supported
     Intel VT-x Technology          Supported

     L1 Data Cache                  32 kB x 4              →←: Select Screen
     L1 Code Cache                  32 kB x 4              ↑↓: Select Item
     L2 Cache                       256 kB x 4             Enter: Select
     L3 Cache                       8 MB                   +/-: Change Opt.
                                                           F1: General Help
     Hyper-threading                [Enabled]              F2: Previous Values
     Intel Virtualization Technology [Enabled]             F3: Optimized Defaults
                                                           F4: Save & Exit
                                                           ESC: Exit

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```

Hyper-threading

Enables or disables hyper-threading technology.

Intel® Virtualization Technology

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

SATA Configuration

This section displays information of the SATA drives.

Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.		
Advanced		
SATA Configuration		Enable or Disable SATA Port
Serial ATA Port 0	Empty	
Software Preserve	Unknown	
Port 0	[Enabled]	
Hot Plug	[Disabled]	
Serial ATA Port 1	Empty	
Software Preserve	Unknown	
Port 1	[Enabled]	
Hot Plug	[Disabled]	
Serial ATA Port 3	Empty	
Software Preserve	Unknown	
Port 3	[Enabled]	
Hot Plug	[Disabled]	→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.1255. Copyright (C) 2017 American Megatrends, Inc.		

Port 0, Port 1 and Port 3

Enables or disables SATA port 0, port 1 or port 3.

Hot Plug

Enables or disables hot plugging feature on SATA port 0, port 1 or port 3.

USB Configuration

This section is used to configure the USB.

Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.		
Advanced		
USB Configuration		Enables Legacy USB support. AUTO option disables legacy support if no USB devices are connected. DISABLE option will keep USB devices available only for EFI applications.
1 Keyboard		
Legacy USB Support	[Enabled]	
XHCI Hand-off	[Enabled]	
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.17.1255. Copyright (C) 2017 American Megatrends, Inc.		

Legacy USB Support

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

XHCI Hand-off

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

PCH-FW Configuration

This section is used to configure the firmware update options.

```
         Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
           Advanced

    ME FW Version              11.0.0.1194              Configure Management Engine
    ME Firmware Mode           Normal Mode              Technology Parameters
    ME Firmware Type           Full Sku Firmware
    ME Firmware SKU            Consumer SKU
  ▶ Firmware Update Configuration




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


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```

Firmware Update Configuration
Enters the Firmware Update Configuration submenu.

Firmware Update Configuration

```
         Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
           Advanced

    Me FW Image Re-Flash           [Disabled]            Enable/Disable Me FW Image
    Local FW Update                [Enabled]             Re-Flash function.




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

         Version 2.17.1255. Copyright (C) 2017 American Megatrends, Inc.
```
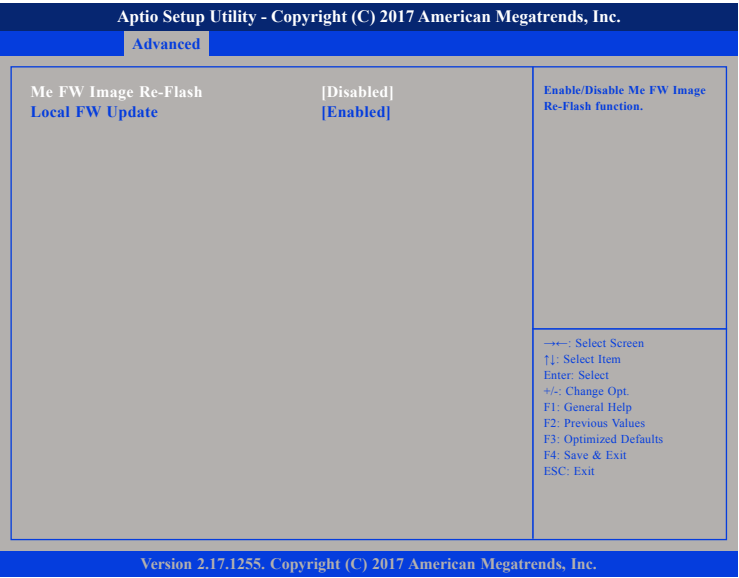
Me FW Image Re-Flash
Enables or disables the ME firmware image re-flash function.

Local FW Update
Enables or disables the local firmware update function.

SIO Configuration

This section is used to configure the serial ports.

[*Active*] Serial Port 1 and [*Active*] Serial Port 2
Enters the submenu of [*Active*] Serial Port 1 and [*Active*] Serial Port 2.

[*Active*] Serial Port 1

Use This Device
Enables or disables the serial port.

Possible:
Configures the base address for the serial port.

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

[*Active*] Serial Port 2

```
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        Advanced

  Serial Port  2 Configuration                        Enable or Disable this Logical
                                                       Device.
  Use This Device                  [Enabled]

  Logical Device Settings:
  Current:      IO=2F8h;  IRQ=3;

  Possible:                        [Use Automatic Settings]


  WARNING:  Disabling SIO Logical Devices may have unwanted
  side effects.
  PROCEED WITH CAUTION.
                                                       →←: Select Screen
                                                       ↑↓: Select Item
                                                       Enter: Select
                                                       +/-: Change Opt.
                                                       F1: General Help
                                                       F2: Previous Values
                                                       F3: Optimized Defaults
                                                       F4: Save & Exit
                                                       ESC: Exit



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```

Use This Device
Enables or disables the serial port.

Possible:
Configures the base address for the serial port.

Hardware Monitor

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

```
          Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
             Advanced

                                                        Smart Fan Configuration

► Smart Fan Configuration

  System Temperature              : +40 °c
  CPU Temperature (PECI)          : +100 °c

  Chassis Fan 1 Speed             : N/A
  CPU Fan Speed                   : N/A

  VCORE                           : +0.992 V
  +12V                            : +11.904 V
  +5V                             : +5.100 V
  3VSB                            : +3.392 V       →←: Select Screen
  +3.3V                           : +3.392 V       ↑↓: Select Item
  VBAT                            : +3.120 V       Enter: Select
                                                   +/-: Change Opt.
                                                   F1: General Help
                                                   F2: Previous Values
                                                   F3: Optimized Defaults
                                                   F4: Save & Exit
                                                   ESC: Exit



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```

System Temperature
Detects and displays the current system temperature.

CPU Temperature (PECI)
Detects and displays the current CPU temperature.

Chassis Fan1 Speed
Detects and displays the current chassis fan speed.

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

VCORE to VBAT
Detects and displays the output voltages.

Smart Fan Configuration

```
            Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
              Advanced

    Smart Fan Configuration                                  Enable/Disable CPU Smart Fan
                                                             Function
    CPU Smart Fan Control            [Enabled]
        Fan Control Mode             [SMART FAN IV Mode]
        Temperature Source           [PECI Agent 0]
        Temperature 1                40
        Temperature 2                50
        Temperature 3                60
        Temperature 4                70
        Fan PWM 1                    150
        Fan PWM 2                    170
        Fan PWM 3                    200
        Fan PWM 4                    220
        Tolerance of Temperature     0
        Critical Temperature         75
        Critical Temp Tolerance      0                       →←: Select Screen
                                                             ↑↓: Select Item
    Chassis 1 Smart Fan Control      [Enabled]               Enter: Select
        Temperature Source           [PWM Mode]              +/-: Change Opt.
        Fan Control Mode             [SMART FAN IV Mode]     F1: General Help
        Temperature Source           [SYSTIN]                F2: Previous Values
        Temperature 1                40                      F3: Optimized Defaults
        Temperature 2                50                      F4: Save & Exit
        Temperature 3                60                      ESC: Exit
        Temperature 4                70

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```

CPU Smart Fan Control
Enables or disables CPU smart fan function.

Fan Control Mode (For CPU Fan)
Configures the fan mode of the CPU fan. The options are Manual Mode, Thermal Cruise Mode (automatic fan mode), Speed Cruise Mode and SMART FAN IV Mode.

Temperature Source (For CPU Fan)
Selects the temperature source.

Temperature 1 to Temperature 4 (For CPU Fan)
Configures the temperature setting.

Fan PWM 1 to Fan PWM 4 (For CPU Fan)
Configures the amount of fan PWN for Smart Fan IV Mode.

Tolerance of Temperature (For CPU Fan)
Configures the tolerance of target temperature.

Critical Temperature (For CPU Fan)
Configures the time that Fan Out requires for reducing its value by one step.

Critical Temp Tolerance (For CPU Fan)
Configures the tolerance of critical temperature.

Chassis 1 Smart Fan Control
Enables or disables chassis 1 smart fan function.

Temperature Source (For Chassis 1 Fan)
Selects the temperature source.

Fan Control Mode (For Chassis 1 Fan)
Configures the fan mode of the CPU fan. The options are Manual Mode, Thermal Cruise Mode (automatic fan mode), Speed Cruise Mode and SMART FAN IV Mode.

Temperature 1 to Temperature 4 (For Chassis 1 Fan)
Configures the temperature setting.

Fan PWM 1 to Fan PWM 4 (For Chassis 1 Fan)
Configures the amount of fan PWN for Smart Fan IV Mode.

Tolerance of Temperature (For Chassis 1 Fan)
Configures the tolerance of target temperature.

Critical Temperature (For Chassis 1 Fan)
Configures the time that Fan Out requires for reducing its value by one step.

Critical Temp Tolerance (For Chassis 1 Fan)
Configures the tolerance of critical temperature.

Power Management

This section is used to configure the power management features.

```
           Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
    Advanced

    Power Management                                       Select system power mode.

    Power Mode                         [ATX Type]
    Power Saving(ERP) Control          [Disabled]
    Restore AC Power Loss              [Last State]

    Wake Events
    RTC wake system from S5            [Fixed Time]
       Wake up day                     0
       Wake up hour                    0
       Wake up minute                  0
       Wake up second                  0
    Resume from PME#                   [Enabled]              →←: Select Screen
    Resume from PCIE/RI                [Enabled]              ↑↓: Select Item
                                                             Enter: Select
                                                             +/-: Change Opt.
                                                             F1: General Help
                                                             F2: Previous Values
                                                             F3: Optimized Defaults
                                                             F4: Save & Exit
                                                             ESC: Exit


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```

Power Mode
Configures the power supply mode.

Power Saving(ERP) Control
Enables or disables power saving mode function.

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

RTC wake system from S5
Enables or disables system wake up from S5.

Fixed Time: System will wake on the hr:min:sec specified.
Dynamic Time: System will wake on the current time + increase minute(s).

```
           Aptio Setup Utility - Copyright (C) 2017 American Megatrends, Inc.
       Advanced

    Power Management                                    Fixed Time: System will wake
                                                        on the hr:min:sec
    Power Mode                      [ATX Type]          specified./n Dynamic Time:
    Power Saving(ERP) Control       [Disabled]          System will wake on the current
    Restore AC Power Loss           [Last State]        time + Increase minute(s)

    Wake Events
    RTC wake system from S5         [Dynamic Time]
       Wake up minute increase      1
    Resume from PME#                [Enabled]
    Resume from PCIE/RI             [Enabled]
                                                             →←: Select Screen
                                                             ↑↓: Select Item
                                                             Enter: Select
                                                             +/-: Change Opt.
                                                             F1: General Help
                                                             F2: Previous Values
                                                             F3: Optimized Defaults
                                                             F4: Save & Exit
                                                             ESC: Exit

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```
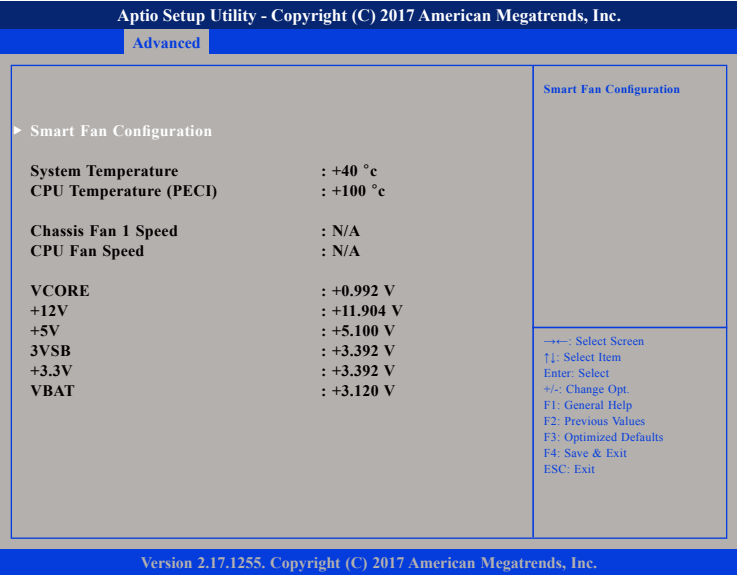
Resume from PME#
Enables or disables resume from PME# function.

Resume from PCIE/RI
Enables or disables resume from PCIE/RI function.

Note: USB does not support S3, S4 and S5 wake.

Digital IO Port Configuration

This section is used to configure digital I/O port settings.

```
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  Advanced

  Digital IO Port Configuration                                   Set DIO as Input or Output

  DIO Port1                        [Output]
     Output Level                  [High   ]
  DIO Port2                        [Output]
     Output Level                  [High   ]
  DIO Port3                        [Output]
     Output Level                  [High   ]
  DIO Port4                        [Output]
     Output Level                  [High   ]
  DIO Port5                        [Input  ]
  DIO Port6                        [Input  ]
  DIO Port7                        [Input  ]            →←: Select Screen
  DIO Port8                        [Input  ]            ↑↓: Select Item
                                                        Enter: Select
                                                        +/-: Change Opt.
                                                        F1: General Help
                                                        F2: Previous Values
                                                        F3: Optimized Defaults
                                                        F4: Save & Exit
                                                        ESC: Exit


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```

DIO Port1 to DIO Port8
Configures DIO port1 to port8 as input or output.

Output Level
Configures the output level as high or low.

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.

```
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   Main      Advanced    Chipset    Security    Boot     Save & Exit

  ► System Agent (SA) Configuration                          System Agent (SA) Parameters
  ► PCH-IO Configuration




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


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```

System Agent (SA) Configuration
Enters the System Agent (SA) Configuration submenu.

PCH-IO Configuration
Enters the PCH-IO Configuration submenu.

System Agent (SA) Configuration

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Chipset		
System Agent Bridge Name	Skylake	**Maximum Value of TOLUD. Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller**
Memory Configuration		
Memory Frequency	2133 MHz	
Total Memory	16384 MB	
DIMM#0	16384 MB	
DIMM#1	Not Present	
Max TOLUD	[Dynamic]	
Max Link Speed	[Auto]	
► Graphics Configuration		
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Max TOLUD
Configures the maximum value of TOLUD.

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

Graphics Configuration

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Chipset		
Graphics Configuration	Skylake	**Select which of IGFX/PEG/PCI Graphics device should be Primary Display Or select SG for Switchable Gfx.**
Primary Display	[Auto]	
Primary IGFX Boot Display	[VBIOS Default]	
LVDS	[Enabled]	
LVDS Panel Type	[1024x768,18bit,60Hz]	
		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
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Primary Display
Select which IGFX/PEG/PCI graphics device should be the primary display or select SG for Switchable Gfx.

Primary IGFX Boot Display
Select the video device which will be activated during POST. Has no effect if external graphics is present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display.

LVDS
Enables or disables LVDS.

LVDS Panel Type
Configures the LVDS panel resolution.

PCH-IO Configuration

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Chipset	

PCH-IO Configuration

HD Audio   [Enabled]

Control Detection of the
HD-Audio device.
Disabled = HDA will be
unconditionally disabled
Enabled = HDA will be
unconditionally enabled
Auto = HDA 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

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HD Audio
Control detection of the HD Audio device.

Disabled	HD Audio will be unconditionally disabled.
Enabled	HD Audio will be unconditionally enabled.
Auto	HD Audio will be enabled if present, disabled otherwise.

Security

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Main	**Advanced**	**Chipset**	**Security**	**Boot**	**Save & Exit**

Password Description

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

Administrator Password
User Password

Set Administrator Password

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

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

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

Boot

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Main	**Advanced**	**Chipset**	**Security**	**Boot**	**Save & Exit**

Boot Configuration

Quiet Boot   [Enabled]
Launch PXE ROM   [Disabled]

Boot Option Priorities

Enables or disables Quiet Boot option

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

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

Launch PXE ROM
Controls the execution of UEFI and legacy PXE OpROM.

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

Save & Exit

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Main	**Advanced**	**Chipset**	**Security**	**Boot**	**Save & Exit**

Save Changes and Reset
Discard Changes and Reset
Restore Defaults

Reset the system after saving the changes.

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

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

Discard Changes and Reset
To exit the Setup utility and reset 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.