



NEXCOM International Co., Ltd.

IoT Automation Solutions Business Group

Embedded Computing (Industrial Motherboard)

NEX 885

User Manual

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Preface

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Disclaimer

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Acknowledgements

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Regulatory Compliance Statements

This section provides the FCC compliance statement for Class B 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 B 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.
3. CompactFlash: Turn off the unit's power before inserting or removing a CompactFlash storage card.

Conventions Used in this Manual



Warning:

Information about certain situations, which if not observed, can cause personal injury. This will prevent injury to yourself when performing a task.



Caution:

Information to avoid damaging components or losing data.



Note:

Provides additional information to complete a task easily.

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Package Contents

Before continuing, verify that the NEX 885 package that you received is complete. Your package should have all the items listed in the following table.

NEX 885 (P/N:10G00088500X0)

Item	Part Number	Name	Qty
1	20G00088500X0	ASSY NEX 885 (10DC)	1
2	60177A0386X00	(N)NEX 885 Quick Reference Guide VER:A SIZE:A4	1
3	602DCD0867X00	(N)NEX 885 DVD Driver VER:1.0	1

Ordering Information

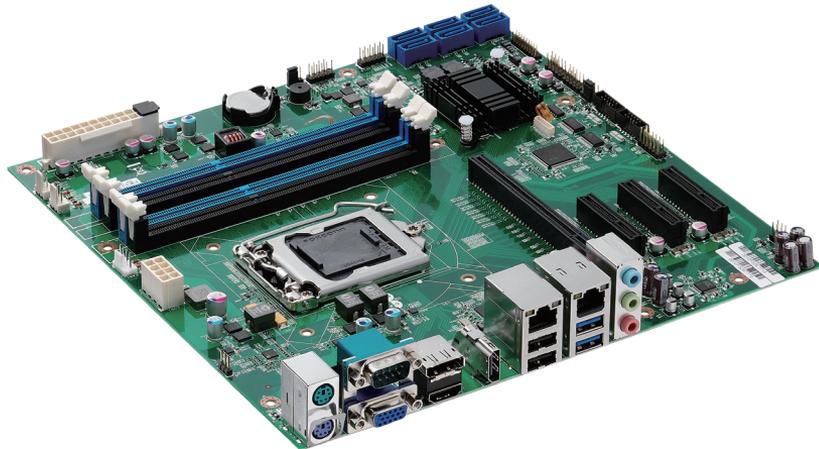
The following information below provides ordering information for NEX 885.

NEX 885

Micro ATX, onboard Q87 to support Socket H3/LGA1150, 4th Generation Intel® Core™ i7/i5/i3 Processors 4DDR3/DIMM, 2HDMI/DP/VGA, PCIe x16/2PCIe x1/PCIe x4, 6x SATA 3.0, 3x USB 3.0/2.0, 7x USB 2.0, 2x GbE, 4x COM, ATX Power Input

Chapter 1: Product Introduction

Overview



Key Features

- Intel® Q87 socket H3/LGA1150 for 4th Generation Intel® Core™ i7/i5/i3 processors
- 4x DDR3 DIMM socket up to 32 GB
- Support 2x HDMI/DisplayPort/VGA up to three independent displays
- 2x Intel® GbE, 6x SATA 3.0, 3x USB 3.0/2.0, 4x USB 2.0/4x COM, 8x GPIO
- 1x PCIe x16, 2x PCIe x1, 1x PCIe x4
- Support AT/ATX mode by ATX power input

Hardware Specifications

CPU Support

- Socket H3/LGA1150, 4th Generation Intel® Core™ i7/i5/i3 processors

Main Memory

- 4 x 240-pin dual channel long DIMMs support DDR3 1066/1333/1600MHz up to 32GB system memory

Chipset

- Intel® Q87 Platform Controller Hub

BIOS

- AMI BIOS UEFI
- Plug and play support

On-board LAN

- ETH 0: Intel® I217LM PHY for AMT 9.0
- ETH 1: Intel® I211 PCI Express Gigabit Ethernet
- Both ETH0 and ETH1 Support boot from LAN (PXE) when +5Vsb power available
- 2x GbE RJ45 with LEDs

Display

- 4th Generation Intel® Core™ socket H3/LGA1150 processors integrated Gen. 7.5 HD graphics
- 2x HDMI
- 1x DisplayPort
- 1x VGA

Expansion

- 1x PCIe x16 (Gen. 3.0)
- 2x PCIe x1
- 1x PCIe x4

Edge I/O Interfaces

- 1x Combo for PS2 KB/MS
- 1x stack DB9 for COM1, and 1x stack DB15 for VGA
- 1x HDMI, 1x stack combo of 2nd HDMI and 1x Display port
- 1x RJ45 (ETH 0) with dual stack USB 3.0 (blue)/USB 2.0 connectors
- 1x RJ45 (ETH 1) with dual stack USB 2.0 (black) connectors
- 1x Stack Line-In/Line-out/Mic-in phone jack

I/O Interfaces

- USB 3.0: 3 ports (2x USB 3.0 on edge I/O, 1x internal box-header)
- USB 2.0: 7 ports (4x USB 2.0 on edge I/O, 3x internal box-header)
- Serial: 4 ports (default COM1/RS-232, pre-selected 1x RS232/422/485, 2x RS-232 by internal)
- SATA HDD: 6 ports, SATA 3.0, Support Software RAID 0/1/5/10 and Intel® Matrix Storage
- GPIO: Supports 4x GPI and 4x GPO with TTL level (0- 5V), 2x 6 pin header, 2.54mm

Interfaces

- One on-board buzzer
- One 4-pin FAN connector for CPU, two 3-pin FAN connector x 2 (for System)
- One 2x 4/2.54mm pin header for: Power LED/Storage LED/Reset/Power On-Off

- One 2x 4/2.54mm pin header for: Mic-in/Line-out
- Front Panel I/O: HDD LED (1-3 pin); Power LED (2-4 pin)
- Reset (5-7 pin); Power Button (6-8 pin)
- Onboard pin header for IrDA Tx/Rx (optional)
- On-chip RTC with back-up battery/CR2032 holder onboard

System Monitor

- Derived from Super IO ITE IT8785E to support System Monitor
- Monitoring of voltages, 2 temperatures and 3 Fans Speed
 - 4 Voltage for 3.3V, 5V, 12V, Vcore
 - 2 Temperatures (CPU, one external Temperature Sensor)
 - 3 Fans speed
- Watchdog timeout can be programmed by software from 1 second to 255 seconds/minutes

Power Input

- Support AT/ATX mode
 - Standard ATX 24-pin connector for +12V/+5V/+3.3V/+5Vsb/-12V ATX
 - 8-pin connector for +12V power connector

Dimensions

- Micro-ATX/Dimension: Lx W, 244mm x 244mm; 9.6" x 9.6"

Environment

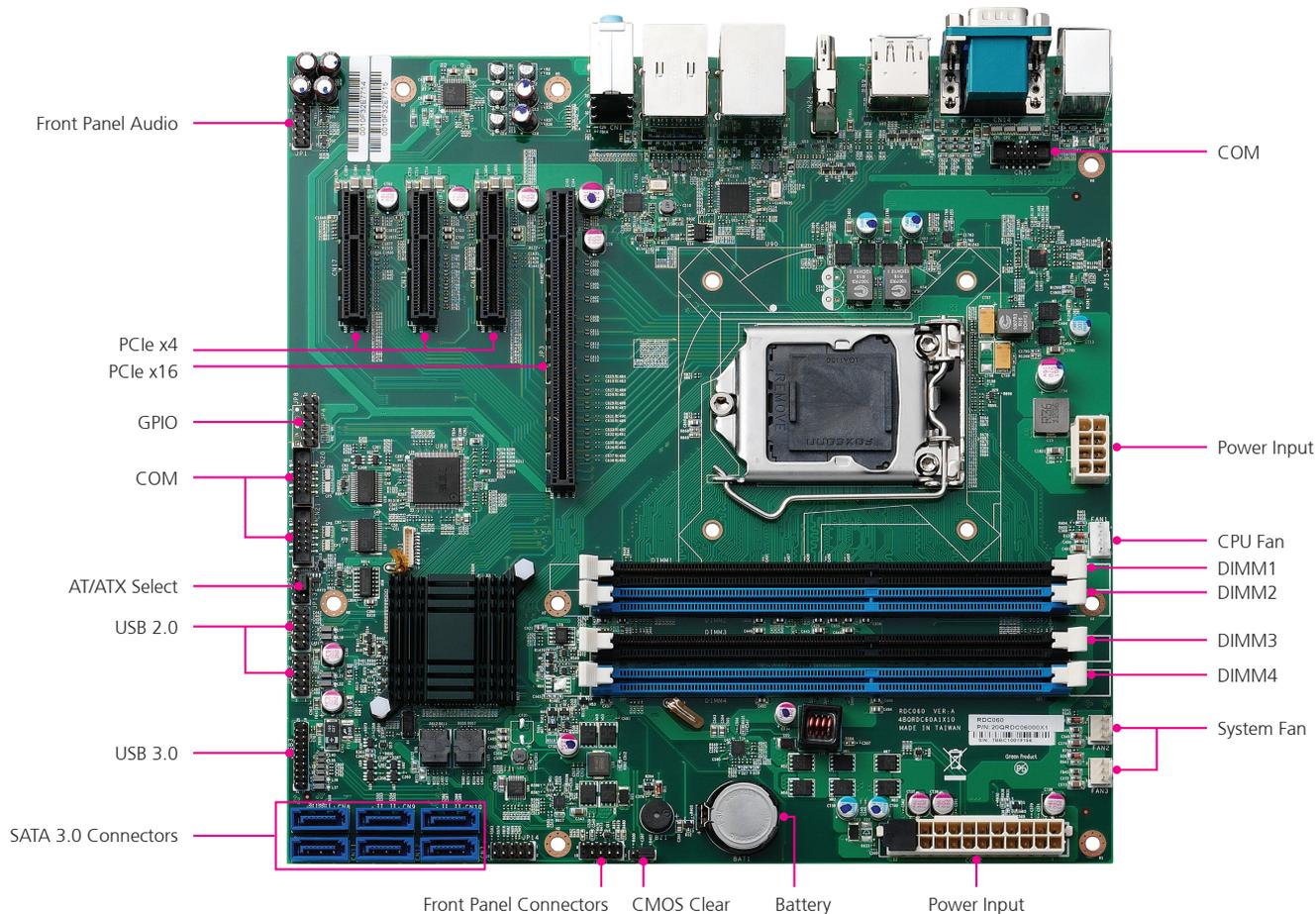
- Board level operating temperatures: -15°C to 60°C
- Storage temperature: -20°C to 85°C
- Relative humidity: Operating 10% to 90%, (non-condensing)

Certifications

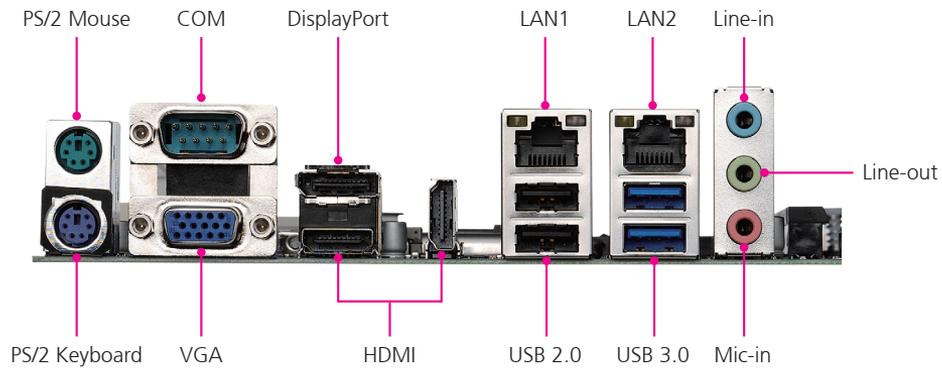
- Meet CE
- FCC Class A

Knowing Your NEX 885

Top View



Edge I/O View



Chapter 2: Jumpers and Connectors

This chapter describes how to set the jumpers and connectors on the NEX 885 motherboard.

Before You Begin

- Ensure you have a stable, clean working environment. Dust and dirt can get into components and cause a malfunction. Use containers to keep small components separated.
- Adequate lighting and proper tools can prevent you from accidentally damaging the internal components. Most of the procedures that follow require only a few simple tools, including the following:
 - A Philips screwdriver
 - A flat-tipped screwdriver
 - A set of jewelers screwdrivers
 - A grounding strap
 - An anti-static pad
- Using your fingers can disconnect most of the connections. It is recommended that you do not use needle-nosed pliers to disconnect connections as these can damage the soft metal or plastic parts of the connectors.
- Before working on internal components, make sure that the power is off. Ground yourself before touching any internal components, by touching a metal object. Static electricity can damage many of the electronic components. Humid environments tend to have less static electricity than

dry environments. A grounding strap is warranted whenever danger of static electricity exists.

Precautions

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

Follow the guidelines below to avoid damage to your computer or yourself:

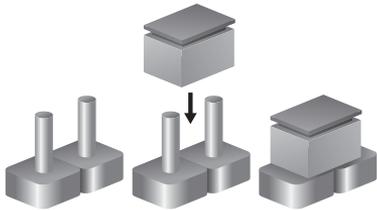
- Always disconnect the unit from the power outlet whenever you are working inside the case.
- If possible, wear a grounded wrist strap when you are working inside the computer case. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Don't flex or stress the circuit board.
- Leave all components inside the static-proof packaging that they shipped with until they are ready for installation.
- Use correct screws and do not over tighten screws.

Jumper Settings

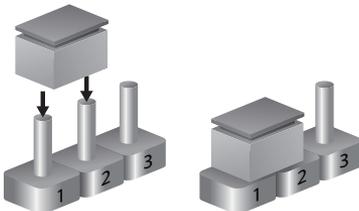
A jumper is the simplest kind of electric switch. It consists of two metal pins and a cap. When setting the jumpers, ensure that the jumper caps are placed on the correct pins. When the jumper cap is placed on both pins, the jumper is short. If you remove the jumper cap, or place the jumper cap on just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

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

Two-Pin Jumpers: Open (Left) and Short (Right)

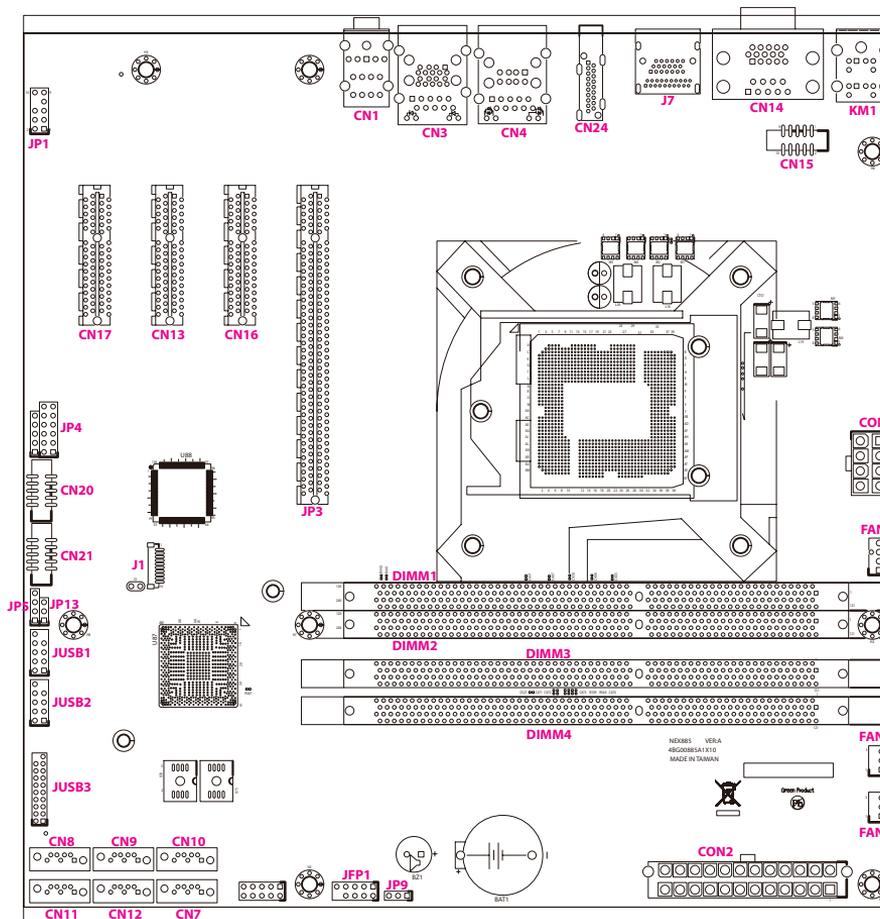


Three-Pin Jumpers: Pins 1 and 2 are Short



Locations of the Jumpers and Connectors

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



Jumpers

CMOS Clear Select

Connector type: 1x3 3-pin header

Connector location: JP9



Pin	Status	Settings
1-2 (*)	Short	Normal (Default)
2-3	Short	Clear BIOS

(*): default

AT/ATX Power Type Select

Connector type: 1x3 3-pin header

Connector location: JP13



Pin	Status	Settings
1-2 (*)	Short	ATX mode (Default)
2-3	Short	AT mode

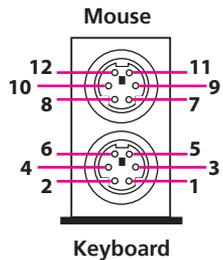
Connector Pin Definitions

External I/O Interfaces

PS/2 Keyboard and Mouse

Connector type: PS/2, Mini-DIN-6

Connector location: KM1



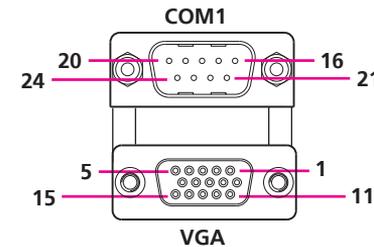
Pin	Definition	Pin	Definition
1	KB DATA	2	NC
3	GND	4	5VDUAL
5	KB CLOCK	6	NC
7	MS DATA	8	NC
9	GND	10	5VDUAL
11	MSCLOCK	12	NC

COM1 and VGA Ports

Connector type: DB-9 port, 9-pin D-Sub (COM1)

DB-15 port, 15-pin D-Sub (VGA)

Connector location: CN14

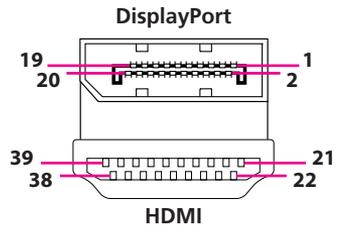


Pin	Definition	Pin	Definition
1	RED	2	GREEN
3	BLUE	4	NC
5	GND	6	GND
7	GND	8	GND
9	+5V	10	GND
11	NC	12	DDCCDATA
13	HSYNC	14	VSYNC
15	DDCCLOCK	16	DCD
17	RXD	18	TXD
19	DTR	20	GND
21	DSR	22	RTS
23	CTS	24	RI

DisplayPort and HDMI

Connector type: DisplayPort and HDMI

Connector location: J7



DisplayPort

Pin	Definition	Pin	Definition
1	LANE0_P	2	GND
3	LANE0_N	4	LANE1_P
5	GND	6	LANE1_N
7	LANE2_P	8	GND
9	LANE2_N	10	LANE3_P
11	GND	12	LANE3_N
13	CONFIG1	14	CONFIG2
15	AUX_CH_P	16	GND
17	AUX_CH_N	18	HPD
19	RETURN	20	DP_PWR

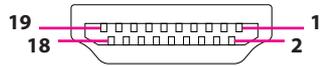
HDMI

Pin	Definition	Pin	Definition
21	D2+	22	D2 SHIELD
23	D2-	24	D1+
25	D1 SHIELD	26	D1-
27	D0+	28	D0 SHIELD
29	D0-	30	CK+
31	CK SHIELD	32	CK-
33	CEC	34	NC
35	SCL	36	SDA
37	PGND	38	VCC5
39	HPD		

HDMI

Connector type: HDMI

Connector location: CN24



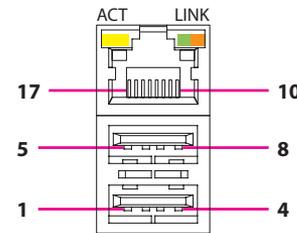
Pin	Definition	Pin	Definition
1	LANE2_P	2	GND
3	LANE2_N	4	LANE1_P
5	GND	6	LANE1_N
7	LANE0_P	8	GND
9	LANE0_N	10	CLKP
11	GND	12	CLKN
13	NC	14	NC
15	CRTL_C	16	CTRL_D
17	GND	18	5V
19	HPD	20	

LAN and USB 2.0 Ports

Connector type: RJ45 port with LEDs

Dual USB 2.0 ports, Type A

Connector location: CN4



Act	Status
Flashing Yellow	Data activity
Off	No activity

Link	Status
Steady Green	100Mbps network link
Steady Orange	1G network link
Off	No link

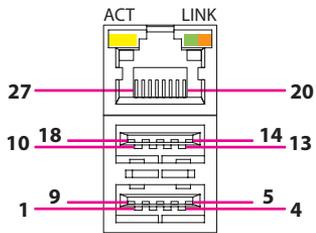
Pin	Definition	Pin	Definition
1	5VDUAL	2	USB2_N
3	USB2_P	4	GND
5	5VDUAL	6	USB3_N
7	USB3_P	8	GND
9	TCT	10	LAN2_MDI0P
11	LAN2_MDI0N	12	LAN2_MDI1P
13	LAN2_MDI1N	14	LAN2_MDI2P
15	LAN2_MDI2N	16	LAN2_MDI3P
17	LAN2_MDI3N	18	GND
19	LAN2_100M#	20	LAN2_1G#
21	LAN2_ACTLED#	22	LAN2_ACTLED# POWER

LAN and USB 3.0 Ports

Connector type: RJ45 port with LEDs

Dual USB 3.0 ports, Type A

Connector location: CN3



Act	Status
Flashing Yellow	Data activity
Off	No activity

Link	Status
Steady Green	100Mbps network link
Steady Orange	1G network link
Off	No link

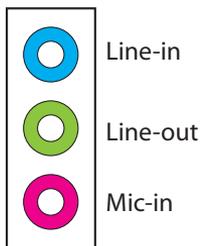
Pin	Definition	Pin	Definition
1	5VDUAL	2	DATA0-
3	DATA0+	4	GND
5	StdA_SSRX-	6	StdA_SSRX+
7	GND	8	StdA_SSTX-
9	StdA_SSTX+	10	5VDUAL
11	DATA1-	12	DATA1+
13	GND	14	StdB_SSRX-
15	StdB_SSRX+	16	GND

Pin	Definition	Pin	Definition
17	StdB_SSTX-	18	StdB_SSTX+
19	TCT	20	MDX1+
21	MDX1-	22	MDX2+
23	MDX2-	24	MDX3+
25	MDX3-	26	MDX4+
27	MDX4-	28	GND
29	ACTLED_P	30	ACTLED_N
31	GREEN	32	ORANGE

Audio Connectors

Connector type: 3.5mm Earphone Jack

Connector location: CN1



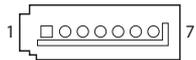
Pin	Definition	Pin	Definition
1	GND	2	MIC1_L
3	MIC1_JD	4	GND
5	MIC1_R	22	FRONT_L
23	FRONT_JD	24	GND
25	FRONT_R	32	LINEIN_L
33	LINEIN_JD	34	GND
35	LINEIN_R		

Internal Connectors

SATA 3.0 Connectors

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

Connector location: CN7, CN8, CN9, CN10, CN11, CN12

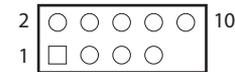


Pin	Definition	Pin	Definition
1	GND	2	SATA_TX_P
3	SATA_TX_N	4	GND
5	SATA_RX_P	6	SATA_RX_N
7	GND		

USB Pin Headers

Connector type: 2x5 10-pin header

Connector location: JUSB1 (USB10, USB11), JUSB2 (USB8, USB9)

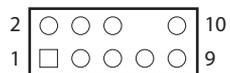


Pin	Definition	Pin	Definition
1	5VDUAL	2	5VDUAL
3	DATA10/8_N	4	DATA11/9_N
5	DATA10/8_P	6	DATA11/9_P
7	GND	8	GND
		10	NC

FP Audio Connector

Connector type: 2x5 10-pin header

Connector location: JP1

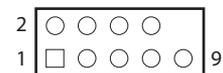


Pin	Definition	Pin	Definition
1	MIC2_L	2	GND
3	MIC2_R	4	FP_AUD_DETECT
5	LINE2_R	6	MIC2_JD
7	GND		
9	LINE2_L	10	LINE2_JD

FP Control Connector

Connector type: 2x5 10-pin header

Connector location: JFP1

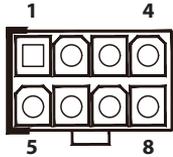


Pin	Definition	Pin	Definition
1	SATA_LED_P	2	PWR_LED_P
3	SATA_LED_N	4	GND
5	GND	6	PWRBT_N
7	RST_BTN_N	8	GND
9	NC		

ATX Power Connector

Connector type: 2x4 8-pin boxed header

Connector location: CON1

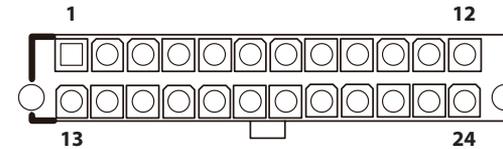


Pin	Definition	Pin	Definition
1	GND	2	GND
3	GND	4	GND
5	VCC12	6	VCC12
7	VCC12	8	VCC12

ATX Power Connector

Connector type: 2x12 24-pin boxed header

Connector location: CON2



Pin	Definition	Pin	Definition
1	VCC3	2	VCC3
3	GND	4	VCC5
5	GND	6	VCC5
7	GND	8	POWEROK
9	5VSB	10	VCC12
11	VCC12	12	VCC3
13	VCC3	14	NC
15	GND	16	PS-ON
17	GND	18	GND
19	GND	20	NC
21	VCC5	22	VCC5
23	VCC5	24	GND

SMBus Connector

Connector type: 1x4 4-pin header

Connector location: JP5

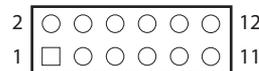


Pin	Definition
1	3VSB
2	SMB_DATA
3	SMB_CLK
4	GND

GPIO Connector

Connector type: 2x6 12-pin header

Connector location: JP4



Pin	Definition	Pin	Definition
1	GPI1	2	GPO1
3	GPI2	4	GPO2
5	GPI3	6	GPO3
7	GPI4	8	GPO4
9	VCC3	10	VCC3
11	GND	12	GND

Port 80 Debug Connector

Connector type: 1x10 10-pin header

Connector location: J1

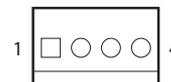


Pin	Definition	Pin	Definition
1	GND	2	LRST
3	LPC_CLK	4	LFRAME#
5	LAD3	6	LAD2
7	LAD1	8	LAD0
9	3VSB	10	3VSB

CPU Fan Connector

Connector type: 1x4 4-pin Wafer

Connector location: FAN1



Pin	Definition
1	GND
2	VCC12
3	FAN_TAC1
4	FAN_CTL1

System Fan Connectors

Connector type: 1x3 3-pin Wafer

Connector location: FAN2 and FAN3

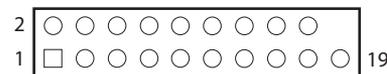


Pin	Definition
1	GND
2	VCC12
3	FAN_TAC

USB 3.0 Connector

Connector type: 2x10 20-pin header

Connector location: JUSB3



Pin	Definition	Pin	Definition
1	NC	2	DATA1+
3	DATA0+	4	DATA1-
5	DATA0-	6	GND
7	GND	8	StdA_SSTX+
9	StdA_SSTX+	10	StdA_SSTX-
11	StdA_SSTX-	12	GND
13	GND	14	StdA_SSRX+
15	StdA_SSTX+	16	StdA_SSRX-
17	StdA_SSTX-	18	5VDUAL
19	5VDUAL	20	NC

COM Port Box Headers

Connector type: 2x5 10-pin header

Connector location: CN15, CN20 and CN21



Pin	Definition	Pin	Definition
1	DCD	2	RXD
3	TXD	4	DTR
5	GND	6	DSR
7	RTS	8	CTS
9	RI	10	GND

PEG x16 Slot

Connector location: JP3



Pin	Definition	Pin	Definition
A1	NC	B1	VCC12
A2	VCC12	B2	VCC12
A3	VCC12	B3	VCC12
A4	GND	B4	GND
A5	NC	B5	SMB_CLK
A6	NC	B6	SMB_DATA
A7	NC	B7	GND
A8	NC	B8	VCC3
A9	VCC3	B9	TRST#
A10	VCC3	B10	3VSB
A11	PERST#	B11	WAKE#
A12	GND	B12	RSV
A13	REFCLK_P	B13	GND
A14	REFCLK_N	B14	TXP0
A15	GND	B15	TXN0
A16	RXP0	B16	GND
A17	RXN0	B17	PRSNT2#
A18	GND	B18	GND

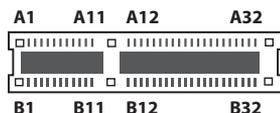
Pin	Definition	Pin	Definition
A19	RSV	B19	TXP1
A20	GND	B20	TXN1
A21	RXP1	B21	GND
A22	RXN1	B22	GND
A23	GND	B23	TXP2
A24	GND	B24	TXN2
A25	RXP2	B25	GND
A26	RXN2	B26	GND
A27	GND	B27	TXP3
A28	GND	B28	TXN3
A29	RXP3	B29	GND
A30	RXN3	B30	RSV
A31	GND	B31	PRSNT2#
A32	RSV	B32	GND
A33	RSV	B33	TXP4
A34	GND	B34	TXN4
A35	RXP4	B35	GND
A36	RXN4	B36	GND

Pin	Definition	Pin	Definition
A37	GND	B37	TXP5
A38	GND	B38	TXN5
A39	RXP5	B39	GND
A40	RXN5	B40	GND
A41	GND	B41	TXP6
A42	GND	B42	TXN6
A43	RXP6	B43	GND
A44	RXN6	B44	GND
A45	GND	B45	TXP7
A46	GND	B46	TXN7
A47	RXP7	B47	GND
A48	RXN7	B48	PRSNT2#
A49	GND	B49	GND
A50	RSV	B50	TXP8
A51	GND	B51	TXN8
A52	RXP8	B52	GND
A53	RXN8	B53	GND
A54	GND	B54	TXP9
A55	GND	B55	TXN9
A56	RXP9	B56	GND
A57	RXN9	B57	GND
A58	GND	B58	TXP10
A59	GND	B59	TXN10

Pin	Definition	Pin	Definition
A60	RXP10	B60	GND
A61	RXN10	B61	GND
A62	GND	B62	TXP11
A63	GND	B63	TX11
A64	RXP11	B64	GND
A65	RXN11	B65	GND
A66	GND	B66	TXP12
A67	GND	B67	TXN12
A68	RXP12	B68	GND
A69	RXN12	B69	GND
A70	GND	B70	TXP13
A71	GND	B71	TXN13
A72	RXP13	B72	GND
A73	RXN13	B73	GND
A74	GND	B74	TXP14
A75	GND	B75	TXN14
A76	RXP14	B76	GND
A77	RXN14	B77	GND
A78	GND	B78	TXP15
A79	GND	B79	TXN15
A80	RXP15	B80	GND
A81	RXN15	B81	PRSNT2#
A82	GND	B82	NC

PCIe x4 Slot

Connector location: CN16

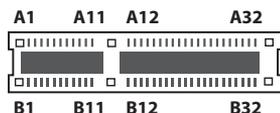


Pin	Definition	Pin	Definition
A1	PRSNT1#	B1	VCC12
A2	VCC12	B2	VCC12
A3	VCC12	B3	VCC12
A4	GND	B4	GND
A5	TCK	B5	SMB_CLK
A6	TDI	B6	SMB_DATA
A7	TDO	B7	GND
A8	TMS	B8	VCC3
A9	VCC3	B9	TRST#
A10	VCC3	B10	3VSB
A11	PERST#	B11	WAKE#
A12	GND	B12	RSV
A13	REFCLK_P	B13	GND
A14	REFCLK_N	B14	TXP8(PCH_TXP2)
A15	GND	B15	TXN8(PCH_TXN2)
A16	RXP8(PCH_RXP2)	B16	GND

Pin	Definition	Pin	Definition
A17	RXN8(PCH_RXN2)	B17	PRSNT2#
A18	GND	B18	GND
A19	RSVD	B19	TXP9
A20	GND	B20	TXN9
A21	PXP9	B21	GND
A22	PXN9	B22	GND
A23	GND	B23	TXP10
A24	GND	B24	TXN10
A25	PXP10	B25	GND
A26	PXN10	B26	GND
A27	GND	B27	TXP11
A28	GND	B28	TXN11
A29	PXP11	B29	GND
A30	PXN11	B30	RSVD
A31	GND	B31	PRSNT3#
A32	RSVD	B32	GND

PCIe x4 Slot

Connector location: CN13

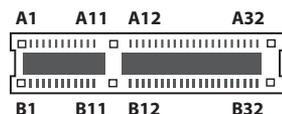


Pin	Definition	Pin	Definition
A1	PRSENT1#	B1	VCC12
A2	VCC12	B2	VCC12
A3	VCC12	B3	VCC12
A4	GND	B4	GND
A5	TCK	B5	SMB_CLK
A6	TDI	B6	SMB_DATA
A7	TDO	B7	GND
A8	TMS	B8	VCC3
A9	VCC3	B9	TRST#
A10	VCC3	B10	3VSB
A11	PERST#	B11	WAKE#
A12	GND	B12	RSV
A13	REFCLK_P	B13	GND
A14	REFCLK_N	B14	PCH_TXP5
A15	GND	B15	PCH_TXN5
A16	PCH_RXP5	B16	GND

Pin	Definition	Pin	Definition
A17	PCH_RXN5	B17	PRSENT2#
A18	GND	B18	GND
A19	RSVD	B19	PCH_TXP6
A20	GND	B20	PCH_TXN6
A21	PCH_PXP6	B21	GND
A22	PCH_PXN6	B22	GND
A23	GND	B23	PCH_TXP7
A24	GND	B24	PCH_TXN7
A25	PCH_PXP7	B25	GND
A26	PCH_PXN7	B26	GND
A27	GND	B27	PCH_TXP8
A28	GND	B28	PCH_TXN8
A29	PCH_PXP8	B29	GND
A30	PCH_PXN8	B30	RSVD
A31	GND	B31	PRSENT3#
A32	RSVD	B32	GND

PCIe x4 Slot

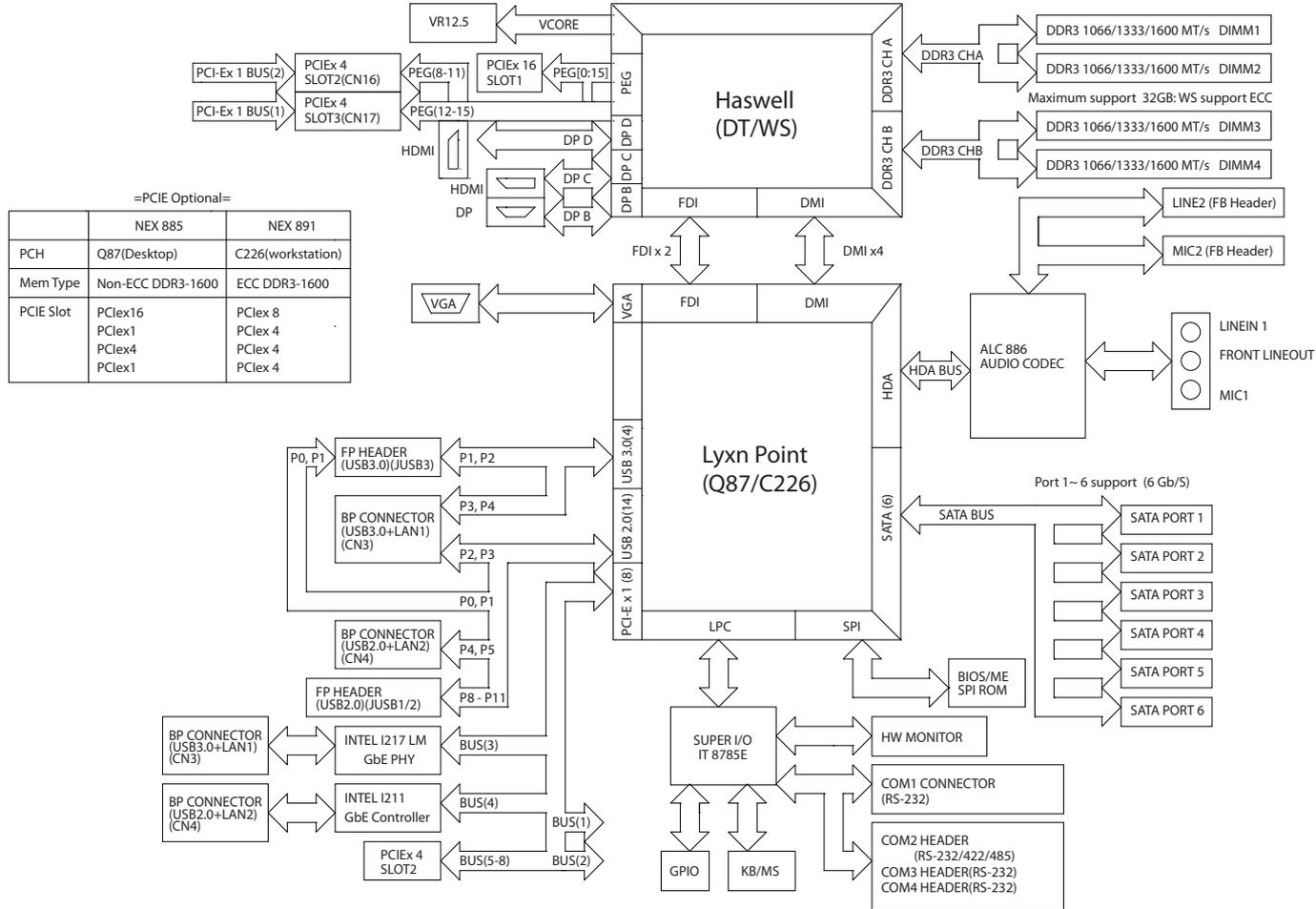
Connector location: CN17



Pin	Definition	Pin	Definition
A1	PRSNT1#	B1	VCC12
A2	VCC12	B2	VCC12
A3	VCC12	B3	VCC12
A4	GND	B4	GND
A5	TCK	B5	SMB_CLK
A6	TDI	B6	SMB_DATA
A7	TDO	B7	GND
A8	TMS	B8	VCC3
A9	VCC3	B9	TRST#
A10	VCC3	B10	3VSB
A11	PERST#	B11	WAKE#
A12	GND	B12	RSV
A13	REFCLK_P	B13	GND
A14	REFCLK_N	B14	TXP12(PCH_TXP1)
A15	GND	B15	TXN12(PCH_TXN1)
A16	RXP12(PCH_RXP1)	B16	GND

Pin	Definition	Pin	Definition
A17	RXN12(PCH_RXN1)	B17	PRSNT2#
A18	GND	B18	GND
A19	RSVD	B19	TXP13
A20	GND	B20	TXN13
A21	PXP13	B21	GND
A22	PXN13	B22	GND
A23	GND	B23	TXP14
A24	GND	B24	TXN14
A25	PXP14	B25	GND
A26	PXN14	B26	GND
A27	GND	B27	TXP15
A28	GND	B28	TXN15
A29	PXP15	B29	GND
A30	PXN15	B30	RSVD
A31	GND	B31	PRSNT3#
A32	RSVD	B32	GND

Block Diagram



Chapter 3: BIOS Setup

This chapter describes how to use the BIOS setup program for the NEX 885. 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 allows you to enter Setup.

Press the  key to enter Setup:

Legends

Key	Function
	Moves the highlight left or right to select a menu.
	Moves the highlight up or down between sub-menu or fields.
	Exits the BIOS Setup Utility.
	Scrolls forward through the values or options of the highlighted field.
	Scrolls backward through the values or options of the highlighted field.
	Selects a field.
	Displays General Help.
	Load previous values.
	Load optimized default values.
	Saves and exits the Setup program.
	Press <Enter> to enter the highlighted sub-menu

Scroll Bar

When a scroll bar appears to the right of the setup screen, it indicates that there are more available fields not shown on the screen. Use the up and down arrow keys to scroll through all the available fields.

Submenu

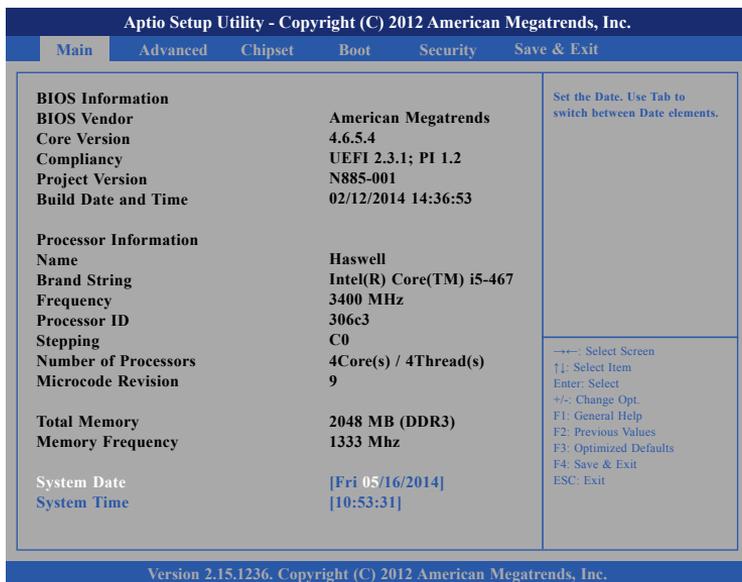
When “▶” appears on the left of a particular field, it indicates that a submenu which contains additional options are available for that field. To display the submenu, move the highlight to that field and press  .

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  to accept or enter the submenu.

Main

The Main menu is the first screen that you will see when you enter the BIOS Setup Utility.



Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.					
Main	Advanced	Chipset	Boot	Security	Save & Exit
BIOS Information		American Megatrends		Set the Date. Use Tab to switch between Date elements.	
BIOS Vendor	4.6.5.4				
Core Version	UEFI 2.3.1; PI 1.2				
Compliance	N885-001				
Project Version	02/12/2014 14:36:53				
Build Date and Time					
Processor Information		Haswell		←→: Select Screen	
Name	Intel(R) Core(TM) i5-467		↑↓: Select Item		
Brand String	3400 MHz		Enter: Select		
Frequency	306c3		+/-: Change Opt.		
Processor ID	C0		F1: General Help		
Stepping	4Core(s) / 4Thread(s)		F2: Previous Values		
Number of Processors	9		F3: Optimized Defaults		
Microcode Revision	2048 MB (DDR3)		F4: Save & Exit		
Total Memory	1333 Mhz		ESC: Exit		
Memory Frequency	[Fri 05/16/2014]				
System Date	[10:53:31]				
System Time					

Version 2.15.1236. Copyright (C) 2012 American Megatrends, Inc.

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.

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.



ACPI Settings

This section is used to configure ACPI settings.



Enable Hibernation

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

ACPI Sleep State

Select the highest ACPI sleep state the system will enter when the suspend button is pressed. The options are Suspend Disabled, S1 only (CPU Stop Clock) and S3 only (Suspend to RAM).

CPU Configuration

This section is used to configure the CPU.

Aptio Setup Utility - Copyright (C) 2012 American Megatrends, Inc.

Advanced

CPU Configuration		Number of cores to enable in each processor package.
Intel(R) Core(TM) i5-4670S CPU @ 3.10GHz		
CPU Signature	306c3	
Processor Family	6	
Microcode Patch	9	
FSB Speed	100 MHz	
Max CPU Speed	3100 MHz	
Min CPU Speed	800 MHz	
CPU Speed	3400 MHz	
Processor Cores	4	
Intel HT Technology	Not Supported	
Intel VT-x Technology	Supported	
Intel SMX Technology	Supported	
64-bit	Supported	
EIST Technology	Supported	
CPU C3 state	Supported	
CPU C6 state	Supported	
CPU C7 state	Supported	
L1 Data Cache	32 kB x 4	
L1 Code Cache	32 kB x 4	
L2 Cache	256 kB x 4	
L3 Cache	6144 kB	

←←←: 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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Hyper-threading

This field is used to enable or disable hyper-threading.

Active Processors Cores

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

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. To avoid this problem, enable this field to limit the return value to 3 or lesser than 3.

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Advanced

FSB Speed	100 MHz	Turbo Mode.
Max CPU Speed	3100 MHz	
Min CPU Speed	800 MHz	
CPU Speed	3400 MHz	
Processor Cores	4	
Intel HT Technology	Not Supported	
Intel VT-x Technology	Supported	
Intel SMX Technology	Supported	
64-bit	Supported	
EIST Technology	Supported	
CPU C3 state	Supported	
CPU C6 state	Supported	
CPU C7 state	Supported	
L1 Data Cache	32 kB x 4	
L1 Code Cache	32 kB x 4	
L2 Cache	256 kB x 4	
L3 Cache	6144 kB	
Hyper-threading	[Enabled]	
Active Processor Cores	[All]	
Limit CPUID Maximum	[Disabled]	
Intel Virtualization Technology	[Enabled]	
EIST	[Enabled]	
Turbo Mode	[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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Intel® Virtualization Technology

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

EIST

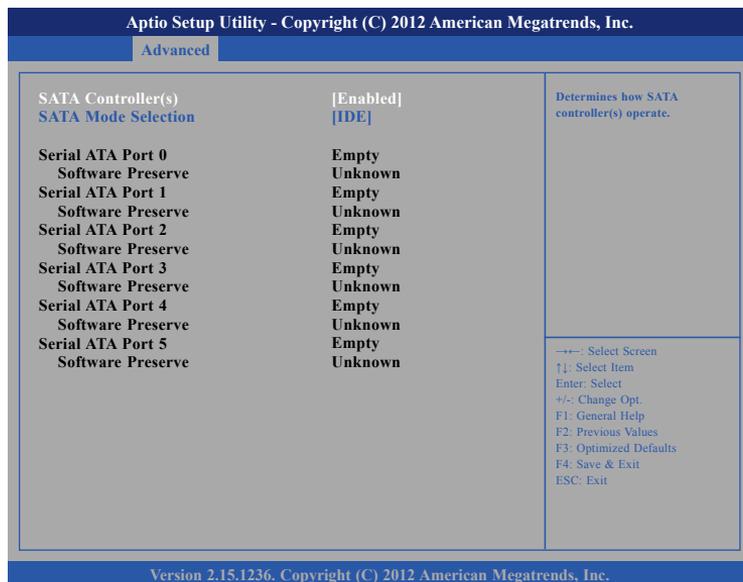
Enables or disables Intel® SpeedStep.

Turbo Mode

Enables or disables turbo mode.

SATA Configuration

This section is used to configure the SATA drives.



SATA Controller(s)

Enables or disables SATA device.

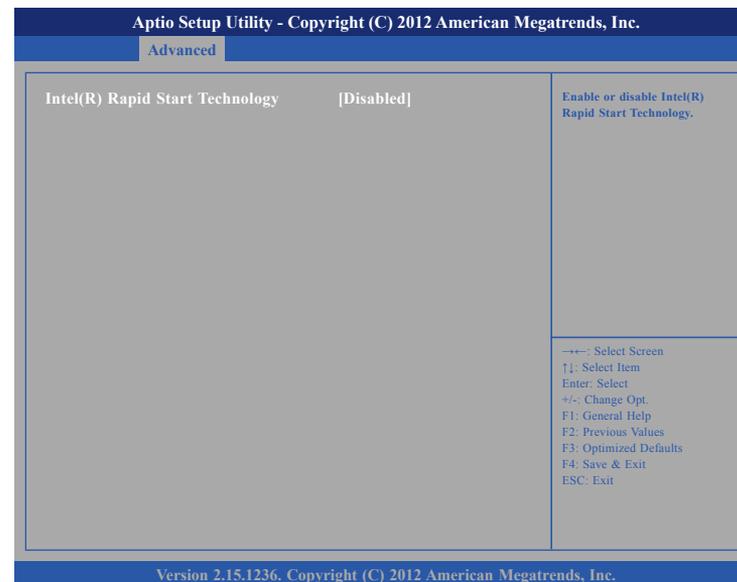
SATA Mode Selection

Configures the SATA as IDE or AHCI 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.

Intel® Rapid Start Technology

This section is used to configure Intel Rapid Start Technology.

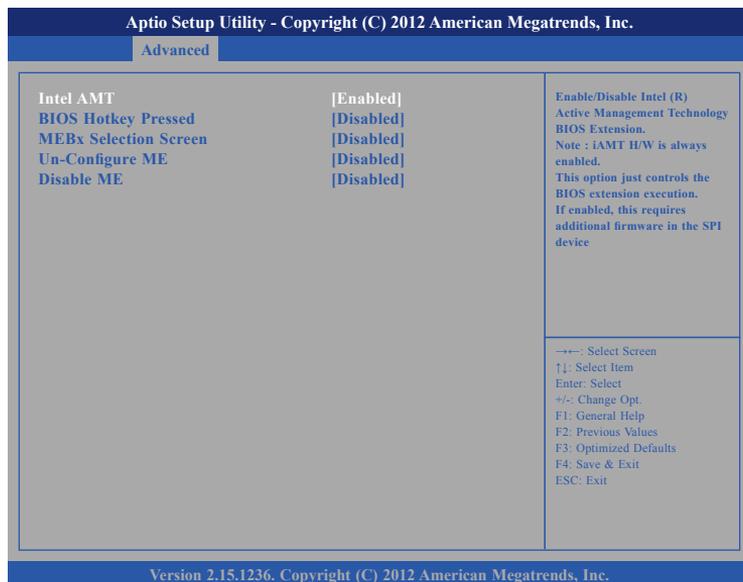


Intel Rapid Start Technology

Enables or disables Intel Rapid Start Technology. When enabled, the system can wake from hibernation within a few seconds.

AMT Configuration

This section is used to configure Active Management Technology (AMT) options.



Intel® AMT

Enables or disables Intel® Active Management Technology.

BIOS Hotkey Pressed

Enables or disables BIOS hotkey press.

MEBx Selection Screen

Enables or disables MEBx selection screen.

Un-Configure ME

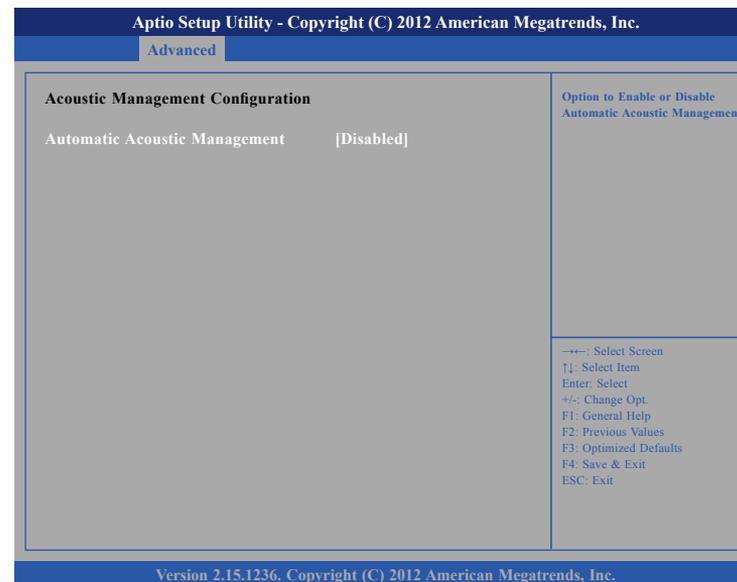
Enables or disables Un-configure ME without password.

Disable ME

Set ME to Soft Temporary Disabled.

Acoustic Management Configuration

This section is used to configure the acoustic management option.

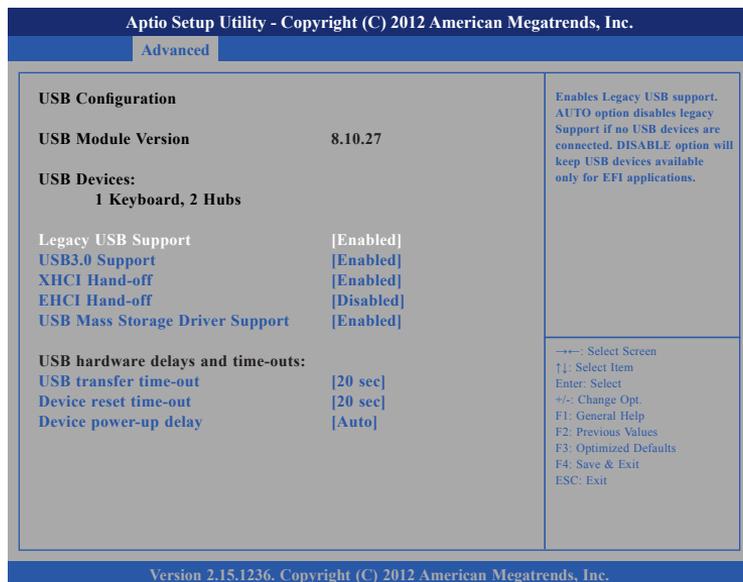


Automatic Acoustic Management

Enables or disables the automatic acoustic management.

USB Configuration

This section is used to configure the USB.



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.

USB3.0 Support

Enables or disables USB 3.0 controller support.

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

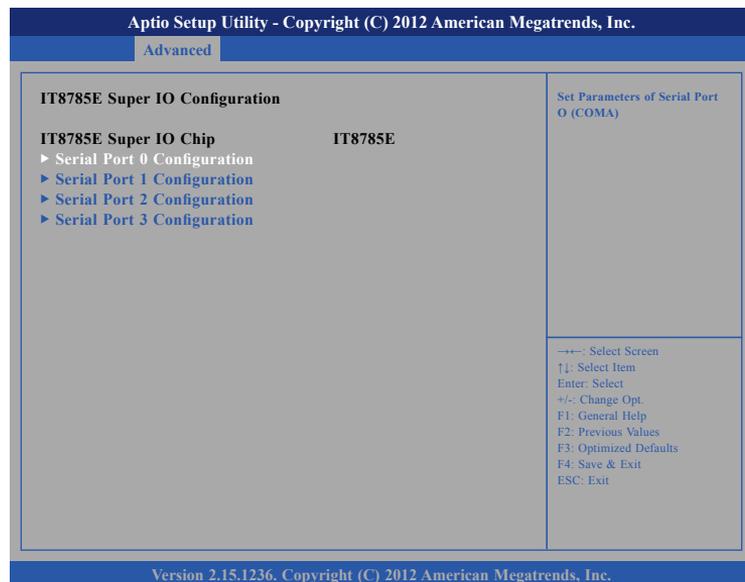
The time-out value for control, bulk, and Interrupt transfers.

Device Power-up Delay

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

IT8785E Super IO Configuration

This section is used to configure the serial ports.

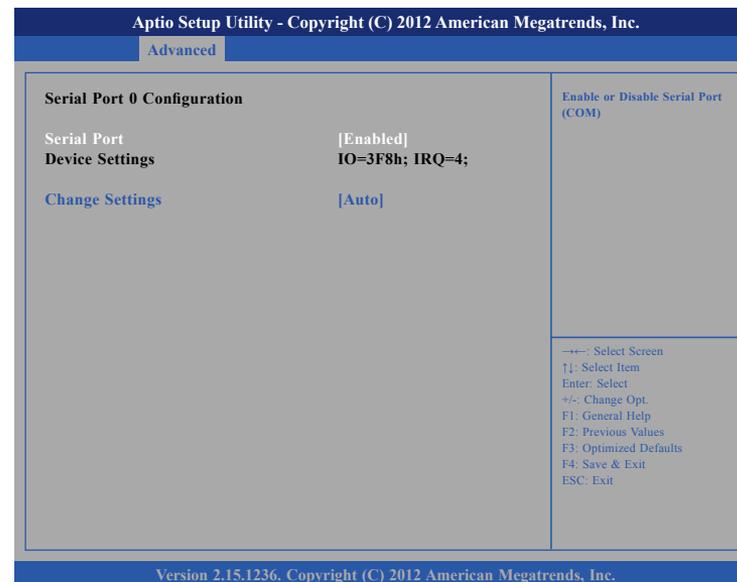


Super IO Chip

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

Serial Port 0 Configuration

This section is used to configure serial port 0.



Serial Port

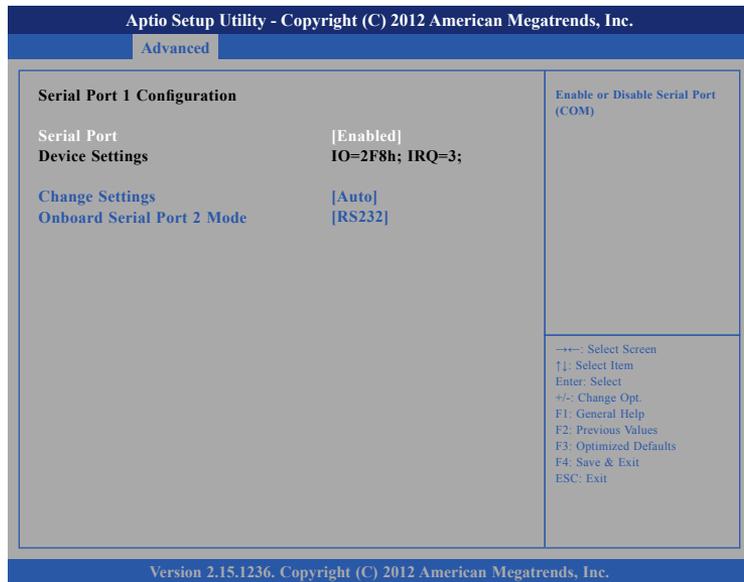
Enables or disables the serial port.

Change Settings

Selects an optimal setting for the Super IO device.

Serial Port 1 Configuration

This section is used to configure serial port 1.



Serial Port

Enables or disables the serial port.

Change Settings

Selects an optimal setting for the Super IO device.

Onboard Serial Port 2 Mode

Select this to change the serial port mode.

Serial Port 2 Configuration

This section is used to configure serial port 2.



Serial Port

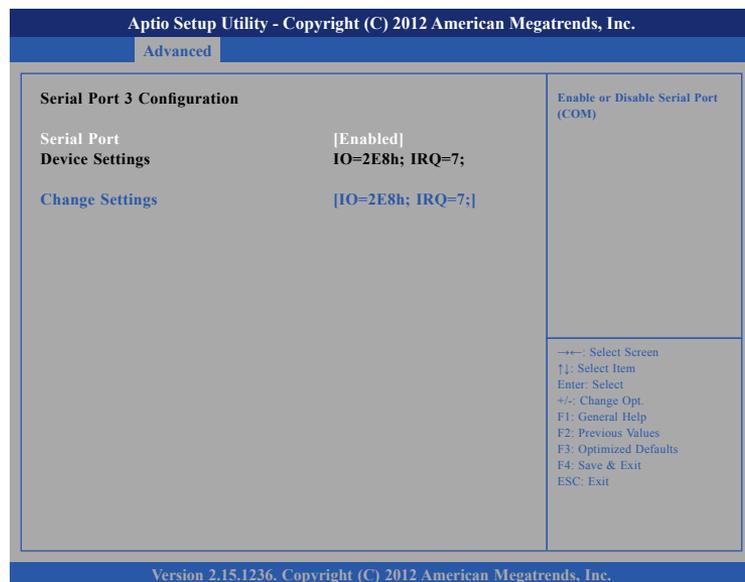
Enables or disables the serial port.

Change Settings

Selects an optimal setting for the Super IO device.

Serial Port 3 Configuration

This section is used to configure serial port 3.



Serial Port

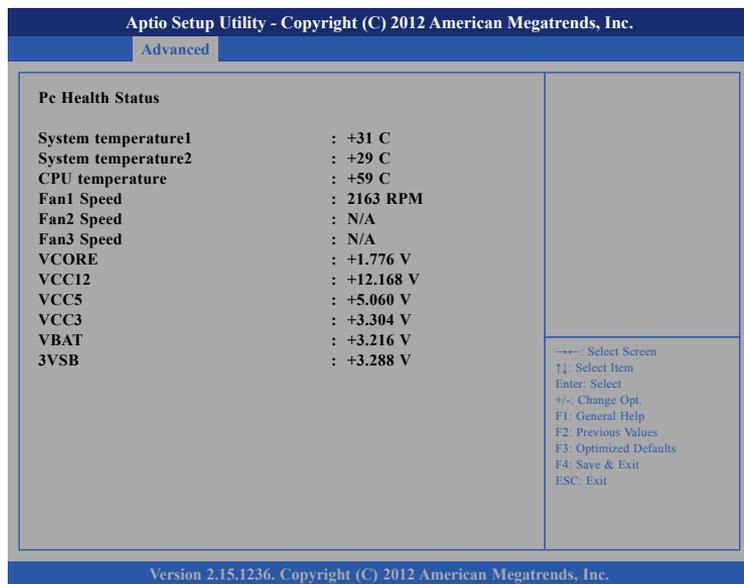
Enables or disables the serial port.

Change Settings

Selects an optimal setting for the Super IO device.

IT8785E H/W Monitor

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



The screenshot shows the 'Advanced' tab of the Aptio Setup Utility. Under the 'PC Health Status' section, the following values are displayed:

System temperature1	: +31 C
System temperature2	: +29 C
CPU temperature	: +59 C
Fan1 Speed	: 2163 RPM
Fan2 Speed	: N/A
Fan3 Speed	: N/A
VCORE	: +1.776 V
VCC12	: +12.168 V
VCC5	: +5.060 V
VCC3	: +3.304 V
VBAT	: +3.216 V
3VSB	: +3.288 V

Navigation instructions are listed in the bottom right corner:

- ←→: 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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VCORE

Detects and displays the Vcore CPU voltage.

VCC12 to 3VSB

Detects and displays the output voltages.

System Temperature1 to System Temperature2

Detects and displays the internal temperature of the system.

CPU Temperature

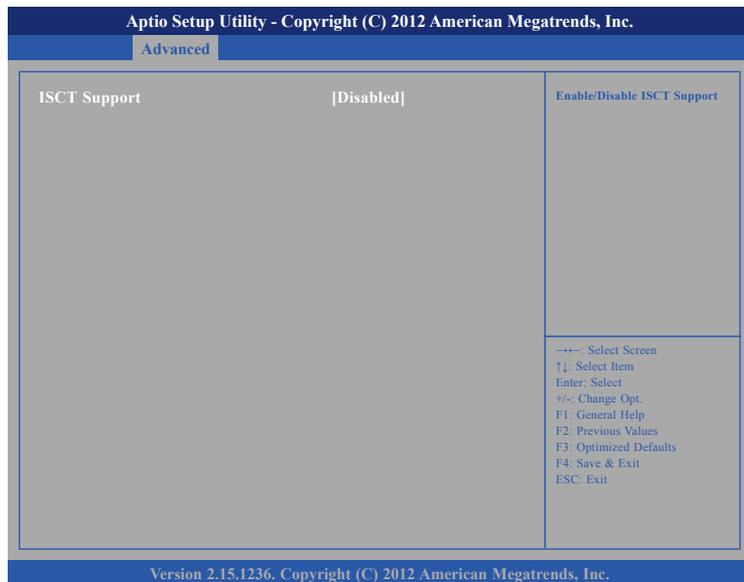
Detects and displays the current CPU temperature.

Fan1 Speed to Fan3 Speed

Detects and displays the current speeds of fan1, fan2 and fan3.

Intel® Smart Connect Technology

This section is used to configure Intel Smart Connect Technology.

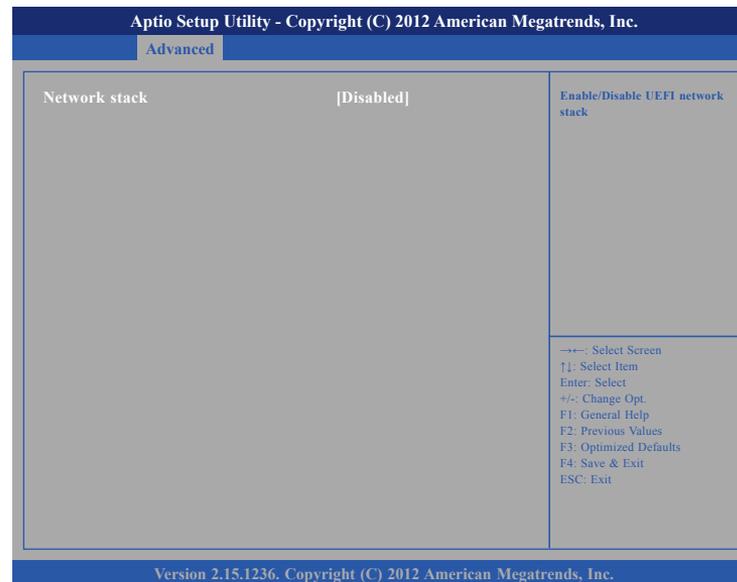


ISCT Support

Enables or disables Intel Smart Connect Technology. When enabled, the system can wake up from standby mode to keep web applications updated.

Network Stack

This section is used to configure the network stack.



Network Stack

Enables or disables UEFI network stack.

Intel® Ethernet Network Connection i217-LM

This section displays the network information of the LAN port.

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Advanced

PORT CONFIGURATION MENU ▶ NIC Configuration		Click to configure the network device port.
Blink LEDs (range 0-15 seconds)	0	
PORT CONFIGURATION INFORMATION UEFI Driver: Intel(R) 1GbE DEV 5.1.00 Adapter PBA: FFFFFFF-0FF Chip Type: Intel PCH LPT PCI Device ID: 153A PCI Bus:Device:Function: 0:25:0 Link Status: [Disconnected] Factory MAC Address: 00:10:F3:32:91:D9		→←: 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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Intel® I211 Gigabit Network Connection

This section displays the network information of the LAN port.

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Advanced

PORT CONFIGURATION MENU ▶ NIC Configuration		Click to configure the network device port.
Blink LEDs (range 0-15 seconds)	0	
PORT CONFIGURATION INFORMATION UEFI Driver: Intel(R) 1GbE DEV 5.1.00 Adapter PBA: FFFFFFF-0FF Chip Type: Intel i211 PCI Device ID: 1539 PCI Bus:Device:Function: 2:0:0 Link Status: [Disconnected] Factory MAC Address: 00:10:F3:2E:77:FB		→←: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

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Chipset

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.



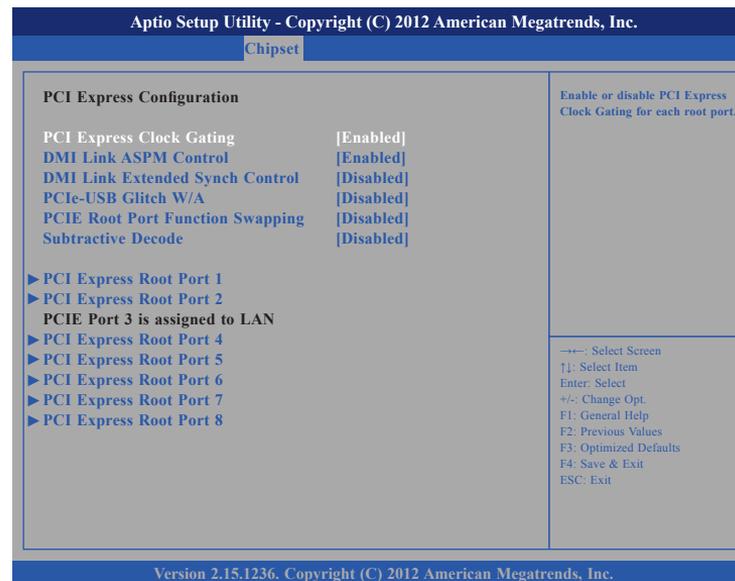
PCH-IO Configuration

PCH-IO parameters.

System Agent (SA) Configuration

System Agent (SA) parameters.

PCI Express Configuration



PCI Express Clock Gating

Enables or disables PCI Express clock gating for each root port.

DMI Link ASPM Control

Enables or disables Active State Power Management of the DMI link.

DMI Link Extended Synch Control

Enables or disables DMI extended synchronization.

PCIe-USB Glitch W/A

Enables or disables PCIe-USB glitch workaround.

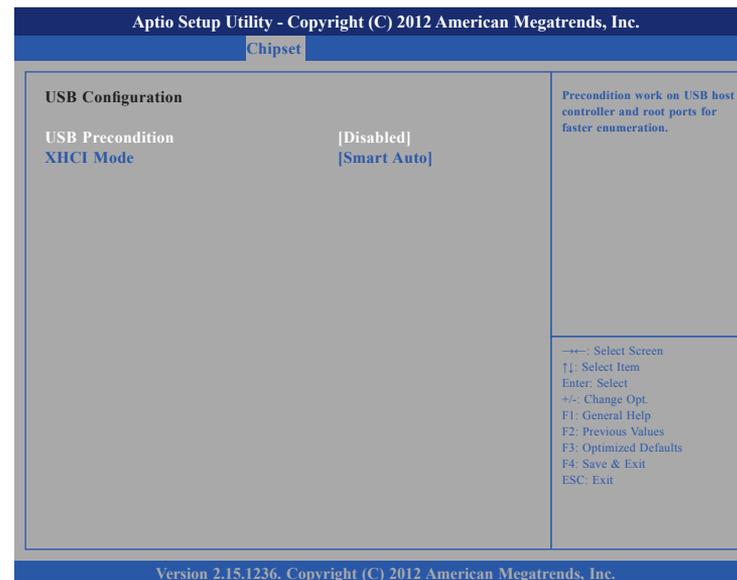
PCI Express Root Port Function Swapping

Enables or disables PCI Express root port function swapping.

Subtractive Decode

Enables or disables PCI Express subtractive decode.

USB Configuration



USB Precondition

Enables or disables precondition on USB host controller and root ports for faster enumeration.

XHCI Mode

Enables or disables XHCI mode.

PCH Azalia Configuration



Azalia

Control detection of the Azalia device.

Disabled Azalia will be unconditionally disabled.

Enabled Azalia will be unconditionally enabled.

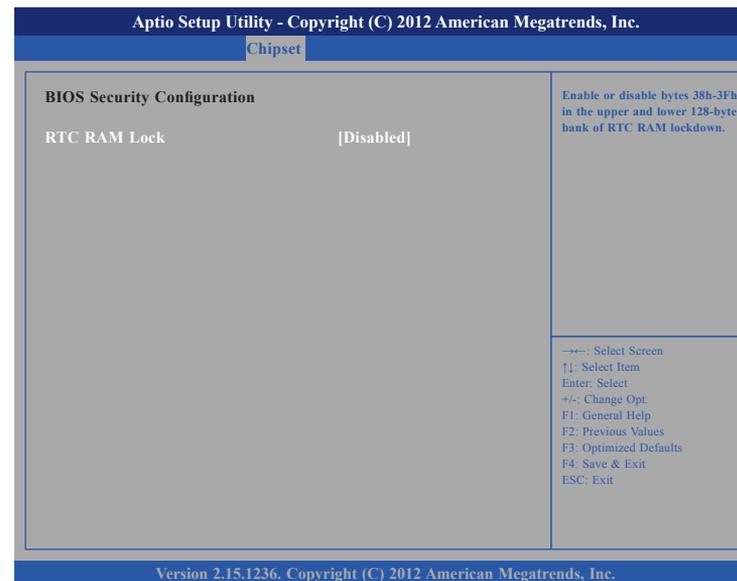
Azalia Docking Support

Enables or disables Azalia docking support of audio controller.

Azalia PME

Enables or disables power management capability of audio controller.

BIOS Security Configuration

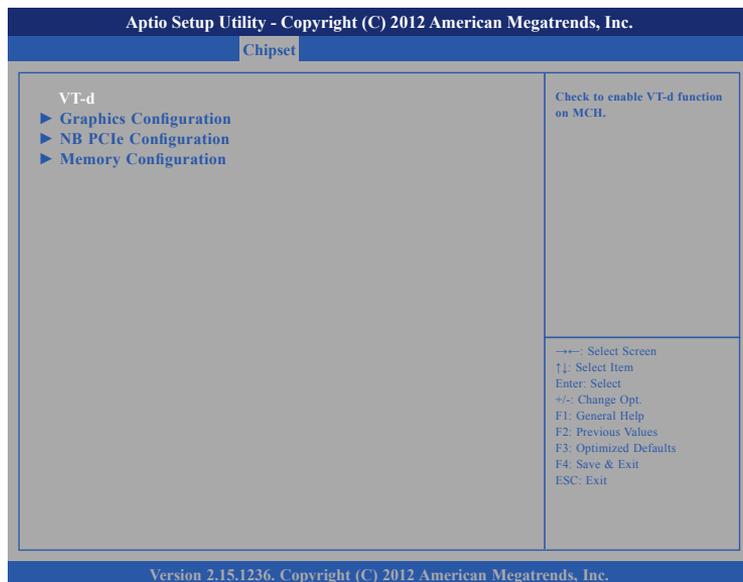


RTC RAM Lock

Enables or disables bytes 38h-3Fh in the upper and lower 128-byte bank of RTC RAM lockdown.

System Agent (SA) Configuration

This section is used to configure the System Agent (SA) configuration.



VT-d

Enables or disables VT-d function on MCH.

Graphics Configuration

Configures the graphic chip settings.

NB PCIe Configuration

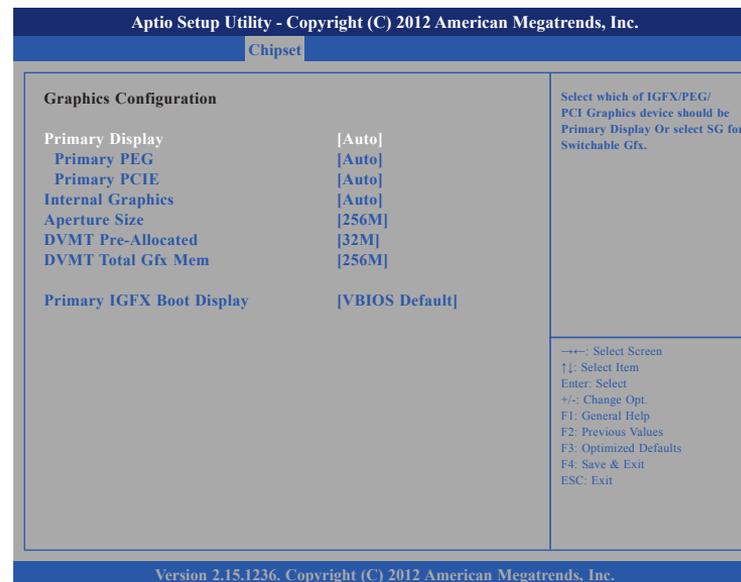
Configures the NB PCI Express settings.

Memory Configuration

Configures the memory settings.

Graphics Configuration

This section is used to configure the Intel® IGFX configuration.



Primary Display

Select which of IGFX/PEG/PCI graphics device should be primary display or select SG for switchable GFX.

Primary PEG

Select which PEG device should be the primary PEG.

Primary PCIE

Select which PCIE device should be the primary PCIE.

Internal Graphics

Keep IGD enabled based on the setup options.

Aperture Size

Select the Aperture size.

DVMT Pre-Allocated

Select DVMT 5.0 pre-allocated (fixed) graphics memory size used by the internal graphics device.

DVMT Total Gfx Mem

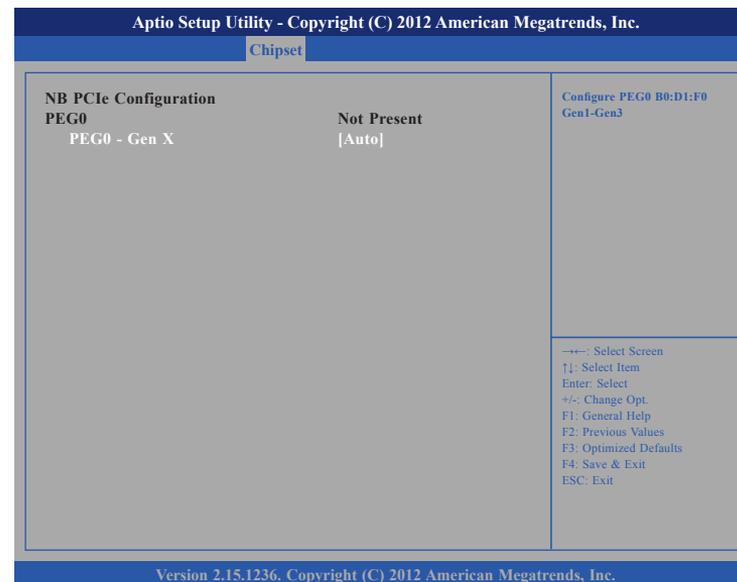
Select DVMT 5.0 Total Graphic Memory size used by the Internal Graphics Device.

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.

NB PCIe Configuration

This section is used to configure Northbridge PCI Express settings.



PEG0 – Gen X

Configure PEG0 B0:D1:F0 Gen1-Gen3

Memory Configuration

This section is used to configure the memory settings.

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Chipset

Memory Information		Maximum Memory Frequency Selections in Mhz.
Memory RC Version	1.6.0.2	
Memory Frequency	1333 Mhz	
Total Memory	2048 MB (DDR3)	
Memory Voltage	1.50v	
DIMM#0	Not Present	
DIMM#1	Not Present	
DIMM#2	Not Present	
DIMM#3	2048 MB (DDR3)	
CAS Latency (tCL)	9	
Minimum delay time		
CAS to RAS (tRCDmin)	9	
Row Precharge (tRPmin)	9	
Active to Precharge (tRASmin)	24	
XMP Profile 1	Not supported	
XMP Profile 2	Not supported	
Memory Frequency Limiter	[Auto]	

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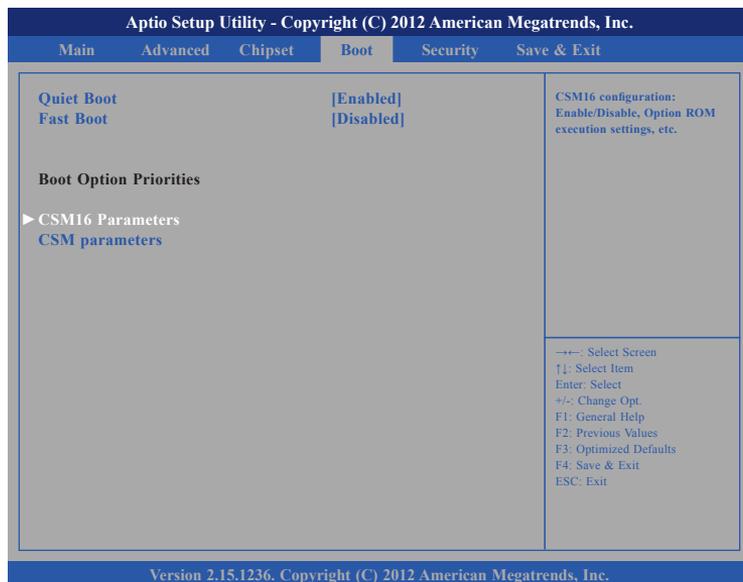
--+--: Select Screen
 ↑↓: Select Item
 Enter: Select
 +/-: Change Opt.
 F1: General Help
 F2: Previous Values
 F3: Optimized Defaults
 F4: Save & Exit
 ESC: Exit

Memory Frequency Limiter

Configures the maximum frequency of the memory.

Boot

This section is used to configure the boot features.



Quiet Boot

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

Fast Boot

When enabled, the BIOS will shorten or skip some check items during POST. This will decrease the time needed to boot the system.

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.

CSM16 Parameters



GateA20 Active

Upon Request GA20 can be disabled using BIOS services.
 Always Do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

Option ROM Messages

This field is used to set 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.

CSM Parameters



Launch Video OpROM Policy

Enables or disables the boot option for legacy video devices.

Other PCI Device ROM Priority

Enables or disables the boot option for legacy PCI devices.

Launch CSM

Enables or disables the launch of CSM.

Boot Option Filter

Configures which drives the system can boot from.

Launch PXE OpROM Policy

Enables or disables the boot option for legacy network devices.

Launch Storage OpROM Policy

Enables or disables the boot option for legacy storage devices.

Security



Administrator Password

Select this to reconfigure the administrator's password.

User Password

Select this to reconfigure the user's password.

Secure Boot Menu



Secure Boot Control

Enables or disables secure boot flow control. Secure boot can be enabled only when:

1. Platform Key(PK) is enrolled and Platform is operating in User mode.
2. CSM function is disabled in Setup.

Secure Boot Mode

Configures the secure boot mode to enable configuration of execution policy and key management.

Save & Exit



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 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.

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

Launches the EFI shell.

Appendix A: Power Consumption

Power Consumption

Power Budget	VCC12	VCC5	VCC3	5VDUAL	3VSB	5VSB	V_3P3_LAN	V_1P05_ME	V_1P05_PCH	VCORE	V_SM	V_SM_VTT	TOTAL WATT
Haswell (DT) VCCIN										95A	4.2A		
Lynx Point (PCH)			0.2A		0.26A	0.001A	0.02A	1.28A	5.23A				
DDR3 DIMM *4											11A	1A	
HD (ALC886)		0.5A	0.5A										
SIO (IT8728F)			1A		0.5A								
LAN1 (I217)							0.2A						
LAN2 (I211)					0.2A								
USB*10 (6*USB 2.0, 4*USB 3.0)				6.6A									
PCIe x16 Slot (75W)	5.5A		3A		0.375A								
PCIe x4 Slot (25W)	2.1A		3A		0.375A								
PCIe x4 Slot (25W)	2.1A		3A		0.375A								
PCIe x4 Slot (25W)	2.1A		3A		0.375A								
VGA CON		0.5A											
HDMI CON		0.5A											
DP CONx 2			1A										
FAN (PWM) *3	1.5A												
Current (Maximum)	13.3A	1.501A	14.765A	6.6A	1.937A	0.001A	0.22A	1.31A	7.49A	95A	15.75A	1A	
Watt (Maximum)	159.6	7.505	48.7254	33	6.4	0.005	0.726	1.3755	7.864	176.7	23.625	0.75	460