

# OMNI-3155-UP

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Industrial Modular Touch Panel PC  
With Intel<sup>®</sup> X5-Z8350 Processor

User's Manual 2nd Ed

## Copyright Notice

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## Packing List

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Before setting up your product, please make sure the following items have been shipped:

Item	Quantity
● OMNI-3155-UP Panel PC	1
● USB Adapter Micro B male to A female	1
● Product CD with drivers	1
● AC to DC Power Adapter (power cord for optional)	1
● Water Proof Sponge	1
● Panel Mount Screws package	1

If any of these items are missing or damaged, please contact your distributor or sales representative immediately.

## About this Document

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This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the [AAEON.com](http://AAEON.com) for the latest version of this document.

## Safety Precautions

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Please read the following safety instructions carefully. It is advised that you keep this manual for future references

1. All cautions and warnings on the device should be noted.
2. All cables and adapters supplied by AAEON are certified and in accordance with the material safety laws and regulations of the country of sale. Do not use any cables or adapters not supplied by AAEON to prevent system malfunction or fires.
3. Make sure the power source matches the power rating of the device.
4. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
5. Always completely disconnect the power before working on the system's hardware.
6. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
7. If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
8. Always disconnect this device from any AC supply before cleaning.
9. While cleaning, use a damp cloth instead of liquid or spray detergents.
10. Make sure the device is installed near a power outlet and is easily accessible.
11. Keep this device away from humidity.
12. Place the device on a solid surface during installation to prevent falls
13. Do not cover the openings on the device to ensure optimal heat dissipation.
14. Watch out for high temperatures when the system is running.
15. Do not touch the heat sink or heat spreader when the system is running
16. Never pour any liquid into the openings. This could cause fire or electric shock.

17. As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.
18. If any of the following situations arises, please the contact our service personnel:
  - i. Damaged power cord or plug
  - ii. Liquid intrusion to the device
  - iii. Exposure to moisture
  - iv. Device is not working as expected or in a manner as described in this manual
  - v. The device is dropped or damaged
  - vi. Any obvious signs of damage displayed on the device
19. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

## FCC Statement

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### **Warning!**



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

### **Caution:**

*There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.*

### **Attention:**

*Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.*



## China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

AAEON Panel PC/ Workstation

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板 及其电子组件	○	○	○	○	○	○
外部信号 连接器及线材	○	○	○	○	○	○
外壳	○	○	○	○	○	○
中央处理器 与内存	○	○	○	○	○	○
硬盘	○	○	○	○	○	○
液晶模块	○	○	○	○	○	○
光驱	○	○	○	○	○	○
触控模块	○	○	○	○	○	○
电源	○	○	○	○	○	○

**O:** 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下。

**X:** 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。

**备注:**  
 一、此产品所标示之环保使用期限，系指在一般正常使用状况下。  
 二、上述部件物质中央处理器、内存、硬盘、光驱、触控模块为选购品。

# China RoHS Requirement (EN)

Poisonous or Hazardous Substances or Elements in Products  
 AAEON Panel PC/ Workstation

Component	Poisonous or Hazardous Substances or Elements					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
PCB & Other Components	○	○	○	○	○	○
Wires & Connectors for External Connections	○	○	○	○	○	○
Chassis	○	○	○	○	○	○
CPU & RAM	○	○	○	○	○	○
Hard Disk	○	○	○	○	○	○
LCD	○	○	○	○	○	○
Optical Drive	○	○	○	○	○	○
Touchscreen	○	○	○	○	○	○
PSU	○	○	○	○	○	○
<p>O: The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement.</p> <p>X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement.</p> <p>Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only</p>						

# Table of Contents

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<b>Chapter 1 - Product Specifications .....</b>	<b>1</b>
1.1 Specifications .....	2
<b>Chapter 2 – Hardware Information .....</b>	<b>5</b>
2.1 Dimensions .....	6
2.2 I/O Ports introduction .....	7
2.3 Jumpers and Connectors .....	8
2.3.1 RTC Battery Wafer (CN1).....	10
2.3.2 USB 3.0 Micro Connector (CN6) .....	10
2.3.3 USB 2.0 x 10P Wafer (CN7) .....	11
2.3.4 Dual USB Type A Connector 1 (CN8).....	11
2.3.5 Dual USB Type A Connector 2 (CN9).....	12
2.3.6 RJ-45 LAN Connector (CN10).....	12
2.3.7 HDMI Connector (CN11).....	13
2.3.8 HAT 40 GPIO Connector (CN12) .....	13
2.3.9 Reset Pin Header (CN14).....	14
2.3.10 DC Jack (CN30) .....	15
2.3.11 MIPI DSI Connector (CN31).....	15
2.3.12 MIPI CSI Connector (CN32).....	16
2.3.13 Power Button Wafer (CN33).....	17
2.3.14 Update CPLD Header (CN34).....	17
2.4 Mount the OMNI-3155-UP onto the wall .....	18
2.5 P-CAP Touch Screen Operating .....	20
<b>Chapter 3 - AMI BIOS Setup.....</b>	<b>21</b>
3.1 System Test and Initialization .....	22
3.2 AMI BIOS Setup .....	23
3.3 Setup Submenu: Main .....	24

3.4	Setup Submenu: Advanced	25
3.4.1	Advanced: CPU Configuration.....	26
3.4.2	Advanced: Trusted Computing.....	27
3.4.3	Advanced: USB Configuration.....	29
3.4.4	Advanced: Power Management.....	30
3.5	Setup submenu: Chipset	31
3.5.1	Chipset: North Bridge.....	32
3.5.1.1	North Bridge: LVDS Panel Configuration.....	34
3.5.2	Chipset: South Bridge.....	35
3.6	Setup submenu: Security	36
3.7	Setup submenu: Boot	37
3.8	Setup submenu: Save & Exit	38
<b>Chapter 4 – Drivers Installation &amp; Touchscreen Settings .....</b>		<b>39</b>
4.1	Product CD/DVD	40
4.2	PCAP Dual Monitor Touch Settings	42
<b>Appendix A - I/O Information.....</b>		<b>44</b>
A.1	I/O Address Map	45
A.2	Memory Address Map	47
A.3	IRQ Mapping Chart	49

# Chapter 1

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Product Specifications

## 1.1 Specifications

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### System

- **Processor** Intel® Atom® X5-Z8350, 1.92 GHz
- **Graphics** Intel® HD 400 Graphics
- **System Memory** 1GB / 2GB / 4GB DDR3L-1600
- **Ethernet** Gb Ethernet x 1 (full speed) RJ-45
- **Side I/O** USB OTG x 1  
HDMI x 1  
DC Jack x 1
- **Bottom I/O** DB-9 for RS232 x 1  
10/100/1000Base-T, RJ-45 x 1  
USB 2.0 A Type x 4
- **Storage** 16GB / 32 GB / 64 GB eMMC
- **Expansion Slot** 40 pin General Purpose bus, supported by Altera Max V. ADC 8-bit@188ksos
- **OS Support** Windows® 10  
Android 6.0  
Linux Ubuntu 16.04

### Environmental

- **Operating Temperature** -20°C~55°C (-4 ~ 131°F) with 0.5 m/s air flow
- **Storage Temperature** -20 ~ 70°C (-4 ~ 158°F)
- **Operating Humidity** 90% @ 40°C, non-condensing

- **Anti-Vibration** 1 Grms/ 5 ~ 500 Hz, X, Y, Z axes
- **EMC** CE/FCC Class A

## Power Supply

- **DC Input** 5 V

## Mechanical

- **Construction** IP65/ NEMA 4 for aluminum front bezel
- **Mounting** Panel Mount / VESA 100
- **Dimension (W x H x D)** 369 x 314 x 56.7 mm (14.5 x 12.4 x 2.2")
- **Carton Dimension (W x H x D)** 510 x 460 x 250 mm (20.1 x 18.1 x 9.8")
- **Gross Weight** 5.3 kg (11.66 lb)

## LCD

- **Display Type** 15" TFT LCD
- **Max. Resolution** 1024 x 768
- **Max Colors** 16.7M (8 bit/color)
- **Luminance (cd/m<sup>2</sup>)** 300 nits
- **Viewing Angle** 176° (H), 176° (V)
- **Backlight** LED
- **Backlight MTBF (Hours)** 70,000hrs

### Touchscreen (Resistive)

- **Type** 5-Wire resistive
- **Light Transmission** 80% ± 2%
- **Lifetime** 100,000,000 keystrokes

### Touchscreen (P-CAP)

- **Type** Projected capacitive touch screen
- **Light Transmission** ≥88%
- **Lifetime** —

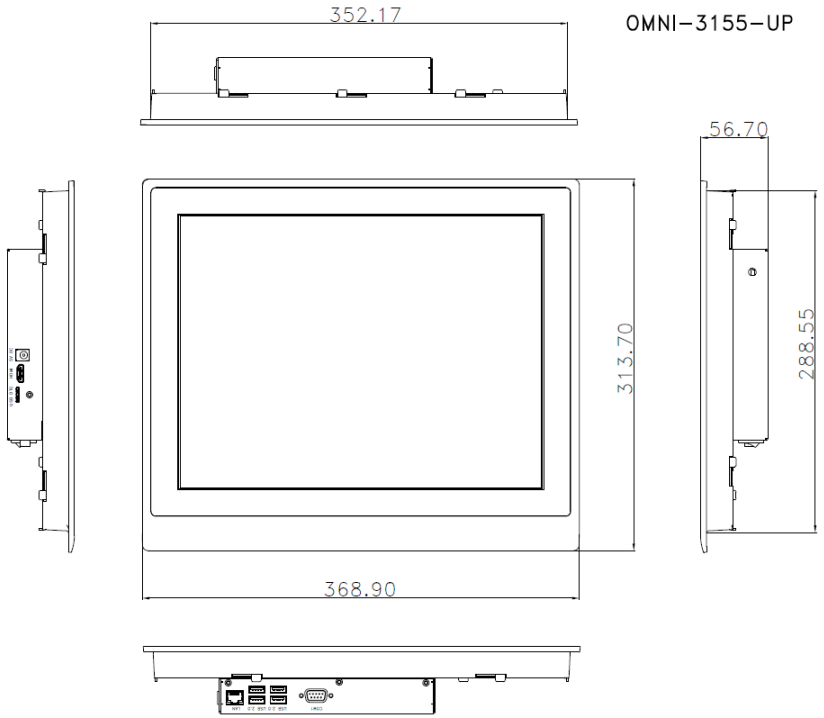


# Chapter 2

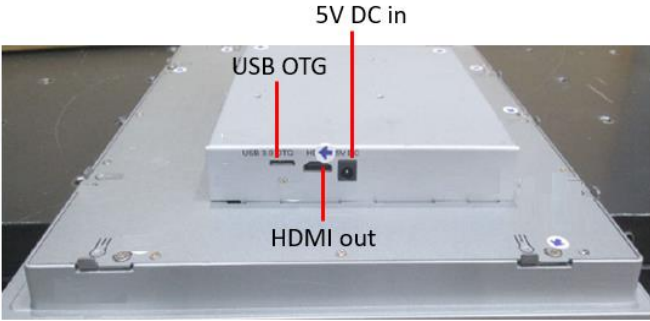
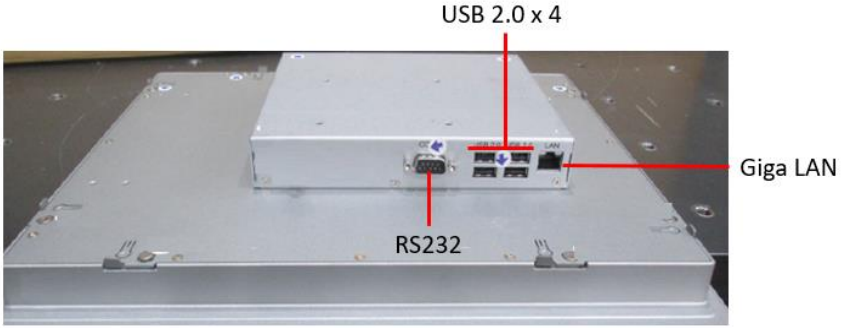
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Hardware Information

## 2.1 Dimensions



## 2.2 I/O Ports introduction

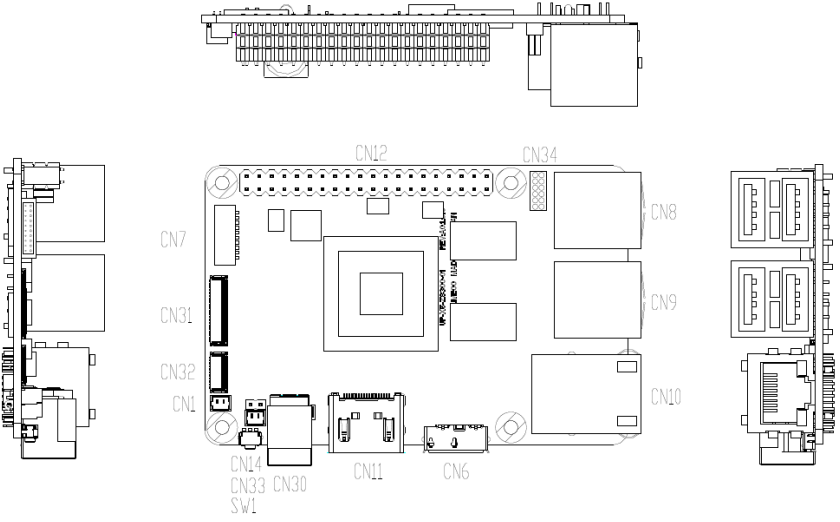


## 2.3 Jumpers and Connectors

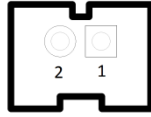
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Please refer to the table below for all of the system's jumpers that you can configure for your application

Label	Function
CN1	RTC Battery
CN6	USB 3.0 Micro Connector
CN7	USB 2.0 1x10P Wafer
CN8	USB Type A Connector 1
CN9	USB Type A Connector 2
CN10	RJ45 LAN Connector
CN11	HDMI Connector
CN12	HAT 40 GPIO Connector
CN14	Reset Pin Header
CN30	DC Jack
CN31	MIPI DSI Connector
CN32	MIPI CSI Connector
CN33	Power Button Wafer
CN34	Update CPLD Header

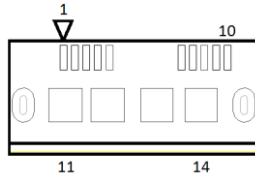


### 2.3.1 RTC Battery Wafer (CN1)



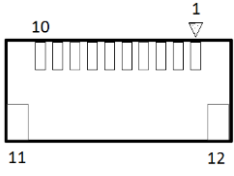
Pin	Signal
1	+V_COIN_BAT
2	GND

### 2.3.2 USB 3.0 Micro Connector (CN6)



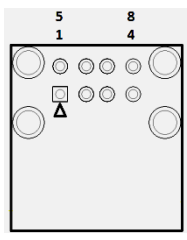
Pin	Signal	Pin	Signal
1	USB_VCC	8	GND
2	USB2_D-	9	CROSSBAR_TX1_N
3	USB2_D+	10	CROSSBAR_TX1_P
4	USB2_ID	11	GND
5	GND	12	GND
6	CROSSBAR_RX1_N	13	GND
7	CROSSBAR_RX1_P	14	GND

### 2.3.3 USB 2.0 x 10P Wafer (CN7)



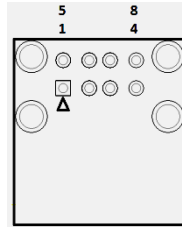
Pin	Signal	Pin	Signal
1	USB_VCC	7	USB_HSIC_P4_D+
2	USB_HSIC_P3_D-	8	GND
3	USB_HSIC_P3_D+	9	UART0_RXD
4	GND	10	UART0_TXD
5	USB_VCC	11	GND
6	USB_HSIC_P4_D-	12	GND

### 2.3.4 Dual USB Type A Connector 1 (CN8)



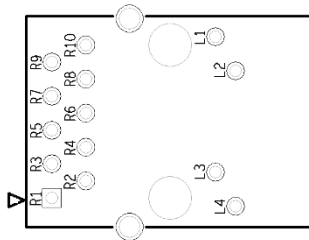
Pin	Signal	Pin	Signal
1	USB_VCC	5	USB_VCC
2	USB2_P1_D-	6	USB2_P2_D-
3	USB2_P1_D+	7	USB2_P2_D+
4	GND	8	GND

### 2.3.5 Dual USB Type A Connector 2 (CN9)



Pin	Signal	Pin	Signal
1	USB_VCC	5	USB_VCC
2	USB2_P3_D-	6	USB_HSIC_P2_D-
3	USB2_P3_D+	7	USB_HSIC_P2_D+
4	GND	8	GND

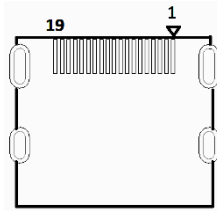
### 2.3.6 RJ-45 LAN Connector (CN10)



Pin	Signal	Pin	Signal
R1	LAN1_MDI0+	R8	LAN1_MDI2-
R2	LAN1_MDI0-	R9	LAN1_MDI3+
R3	LAN1_MDI1+	R10	LAN1_MDI3-
R4	LAN1_MDI1-	L1	LAN_ACTLED P
R5	LAN1_MDI2+	L2	LAN_ACTLED N
R6	LAN1_MDI2-	L3	LAN_LINK100#
R7	LAN1_MDI2+	L4	LAN_LINK1000#

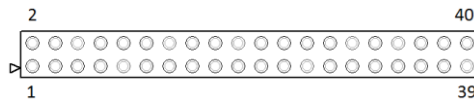


### 2.3.7 HDMI Connector (CN11)



Pin	Signal	Pin	Signal
1	DDI2_TX0_HDMI_DP+	11	GND
2	GND	12	DDI2_CLK_HDMI_DN-
3	DDI2_TX0_HDMI_DN-	13	HDMI_CEC_D
4	DDI2_TX1_HDMI_DP+	14	NC
5	GND	15	DDI2_DDC_CLK
6	DDI2_TX1_HDMI_DN-	16	DDI2_DDC_DAT
7	DDI2_TX2_HDMI_DP+	17	GND
8	GND	18	+5V_HDMI
9	DDI2_TX2_HDMI_DN-	19	DDI2_TYPE_C_HPD
10	DDI2_CLK_HDMI_DP+		

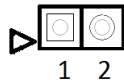
### 2.3.8 HAT 40 GPIO Connector (CN12)



Pin	Signal	Pin	Signal
1	+3.3V	2	+5V
3	I2C1_SDA	4	+5V
5	I2C1_SCL	6	GND
7	ISH_GPIO0	8	UART_TX

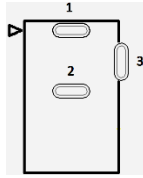
9	GND	10	UART_RX
11	SD2_CMD	12	I2S2_CLK
13	SD2_CLK	14	GND
15	SD2_SD0	16	SD2_SD1
17	+3.3V	18	SD2_SD2
19	SPI2_MOSI	20	GND
21	SPI2_MISO	22	SD2_SD3
23	SPI2_CLK	24	ISH_SPI2_CS0
25	GND	26	ISH_SPI2_CS1
27	I2C0_SDA	28	I2C0_SCL
29	ISH_GPIO2	30	GND
31	ISH_GPIO3	32	PWM0
33	PWM1	34	GND
35	I2S2_FRM	36	GPIO27
37	GPIO13	38	I2S2_RX
39	GND	40	I2S2_TX

### 2.3.9 Reset Pin Header (CN14)



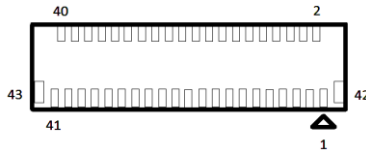
Pin	Signal
1	PMU_RSTBTN_N
2	GND

### 2.3.10 DC Jack (CN30)



Pin	Signal
1	+V5
2	GND
3	GND

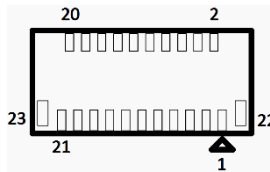
### 2.3.11 MIPI DSI Connector (CN31)



Pin	Signal	Pin	Signal	Pin	Signal
1	MDSI_A_DATA1_DN	16	DDI0_TX0_DP	31	DDI0_HPDC_CONN
2	MDSI_A_DATA1_DP	17	DDI0_TX0_DN	32	DDI0_BKLT_R_CTRL
3	GND	18	GND	33	DDI0_VDD_EN
4	MDSI_A_CLK_DN	19	DDI0_TX1_DP	34	DDI0_BKLT_EN
5	MDSI_A_CLK_DP	20	DDI0_TX1_DN	35	NC
6	GND	21	GND	36	NC
7	MDSI_A_DATA0_DN	22	DDI0_TX2_DP	37	+3.3V
8	MDSI_A_DATA0_DP	23	DDI0_TX2_DN	38	+3.3V
9	GND	24	GND	39	+3.3V
10	I2C2_3P3_SCL	25	DDI0_TX3_DP	40	+3.3V

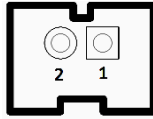
11	I2C2_3P3_SDA	26	DDI0_TX3_DN	41	+3.3V
12	GND	27	GND	42	GND
13	DDI1_DDC_C_CLK	28	DDI0_AUX_DP	43	GND
14	DDI1_DDC_C_DAT	29	DDI0_AUX_DN		
15	GND	30	GND		

### 2.3.12 MIPI CSI Connector (CN32)



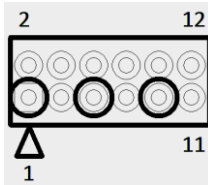
Pin	Signal	Pin	Signal
1	GND	13	GND
2	MCSI_1_DATA1_DN	14	CAM_MCLK
3	MCSI_1_DATA1_DP	15	GND
4	GND	16	I2C2_SOC_SCL
5	MCSI_1_CLK_DN	17	I2C2_SOC_SDA
6	MCSI_1_CLK_DP	18	CAM_RST_N
7	GND	19	FLASH_RESET_N
8	MCSI_1_DATA0_DN	20	+2.8V
9	MCSI_1_DATA0_DP	21	GND_CAM
10	GND	22	GND
11	+1.2V	23	GND
12	+1.8V		

### 2.3.13 Power Button Wafer (CN33)



Pin	Signal
1	PWR_SW#_CTL_R
2	GND

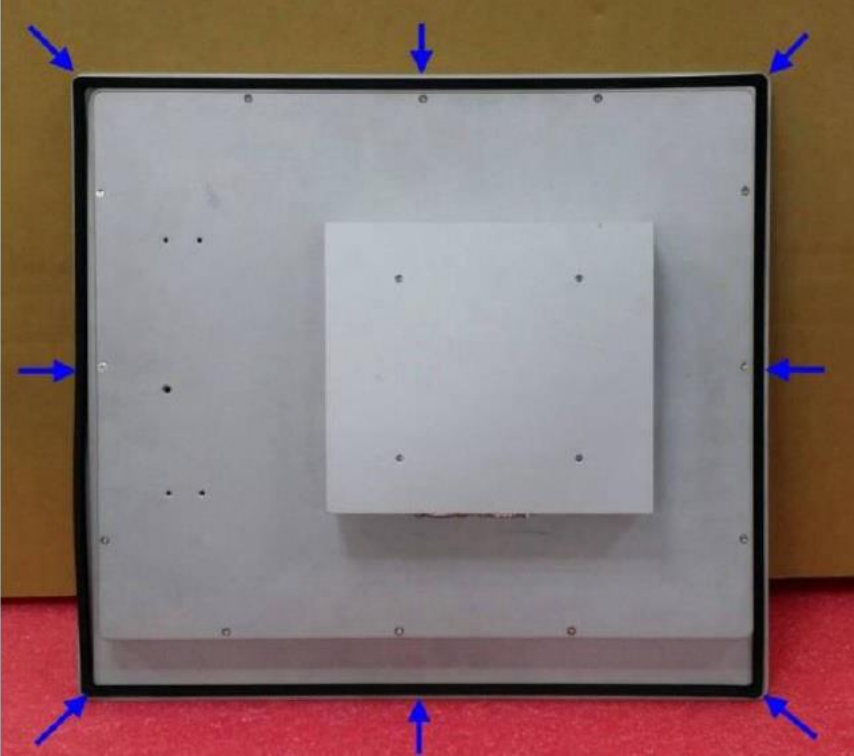
### 2.3.14 Update CPLD Header (CN34)



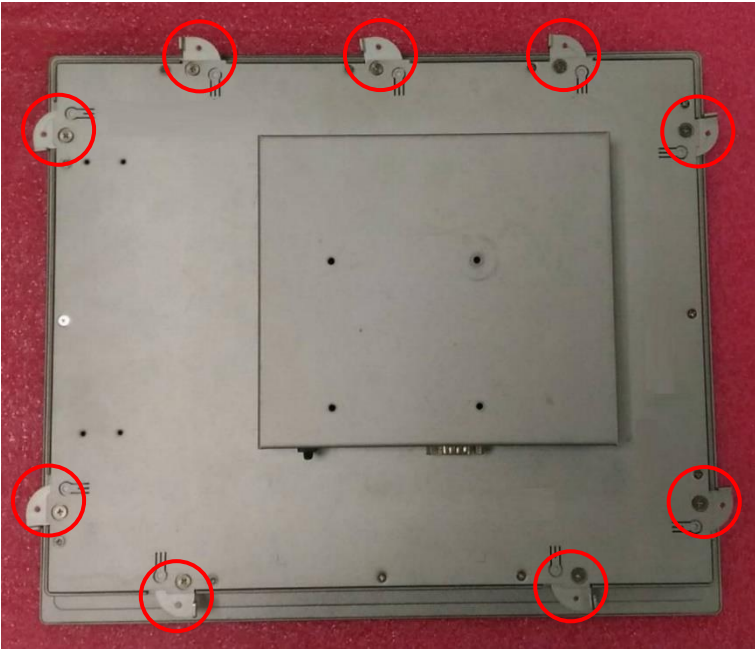
Pin	Signal	Pin	Signal
1	CHT_GPIO_TMS	2	CPLD_TMS
3	CHT_GPIO_TDI	4	CPLD_TDI
5	CHT_GPIO_TCK	6	CPLD_TCK
7	CHT_GPIO_TDO	8	CPLD_TDO
9	FAN_PWM	10	+1.8V
11	+5V	12	GND

## 2.4 Mount the OMNI-3155-UP onto the wall

**Step 1** - Glue the waterproof rubber along back side of the panel



**Step 2** - Pull the Panel Mount clips out along the edges of front frame



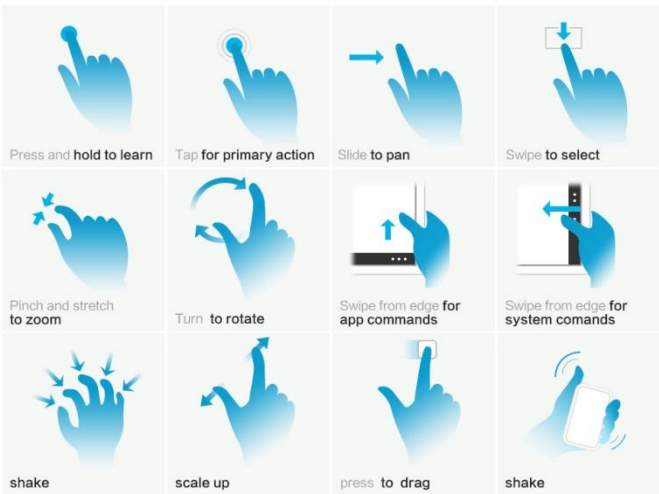
**Step 3** – use screws to secure the panel onto the wall with the wall-mount brackets



## 2.5 P-CAP Touch Screen Operating



1. Always touch the screen with finger pads.
2. The force of finger should be lower than 10g.





# Chapter 3

---

AMI BIOS Setup

## 3.1 System Test and Initialization

---

The system uses certain routines to perform testing and initialization. If an error, fatal or non-fatal, is encountered, a few short beeps or an error message will be outputted. The board can usually continue the boot up sequence with non-fatal errors.

The system configuration verification routines check the current system configuration against the values stored in the CMOS memory. If they do not match, an error message will be outputted, in which case you will need to run the BIOS setup program to set the configuration information in memory.

There are three situations in which you will need to change the CMOS settings:

- You are starting your system for the first time
- You have changed your system's hardware
- The CMOS memory has lost power and the configuration information is erased

The system's CMOS memory uses a backup battery for data retention, which is to be replaced once emptied.

## 3.2 AMI BIOS Setup

---

The AMI BIOS ROM has a pre-installed Setup program that allows users to modify basic system configurations, which is stored in the battery-backed CMOS RAM and BIOS NVRAM so that the information is retained when the power is turned off.

To enter BIOS Setup, press <Del> or <F2> immediately while your computer is powering up.

The function for each interface can be found below.

**Main** – Date and time can be set here. Press <Tab> to switch between date elements

**Advanced** – Enable/ Disable boot option for legacy network devices

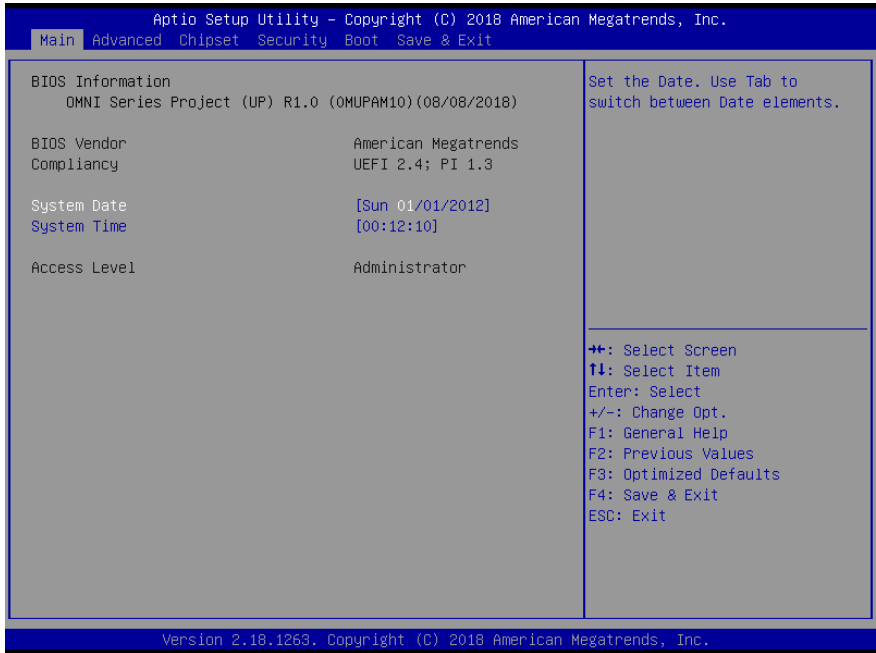
**Chipset** – For hosting bridge parameters

**Boot** – Enable/ Disable quiet Boot Option

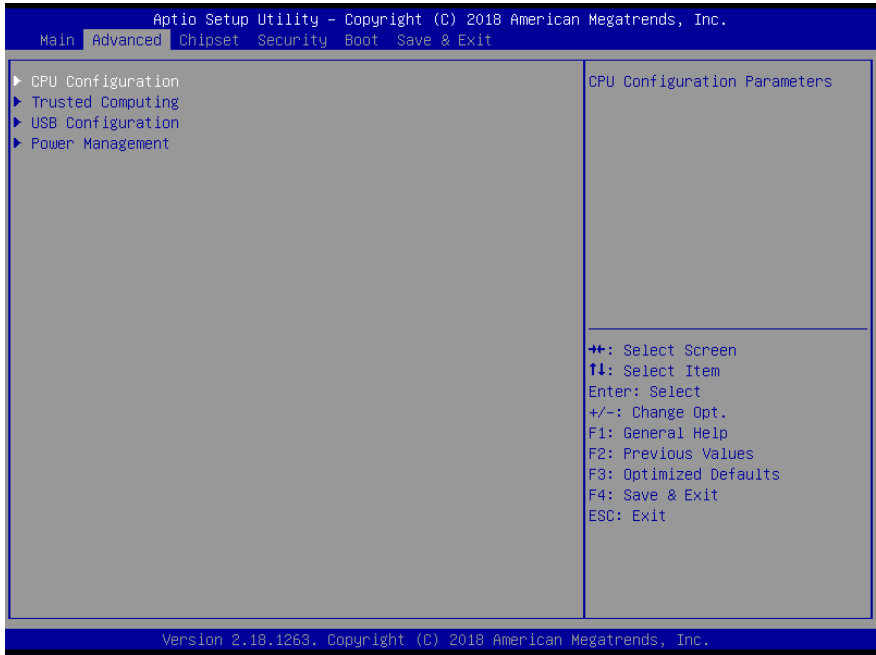
**Security** – The setup administrator password can be set here

**Save & Exit** – Save your changes and exit the program

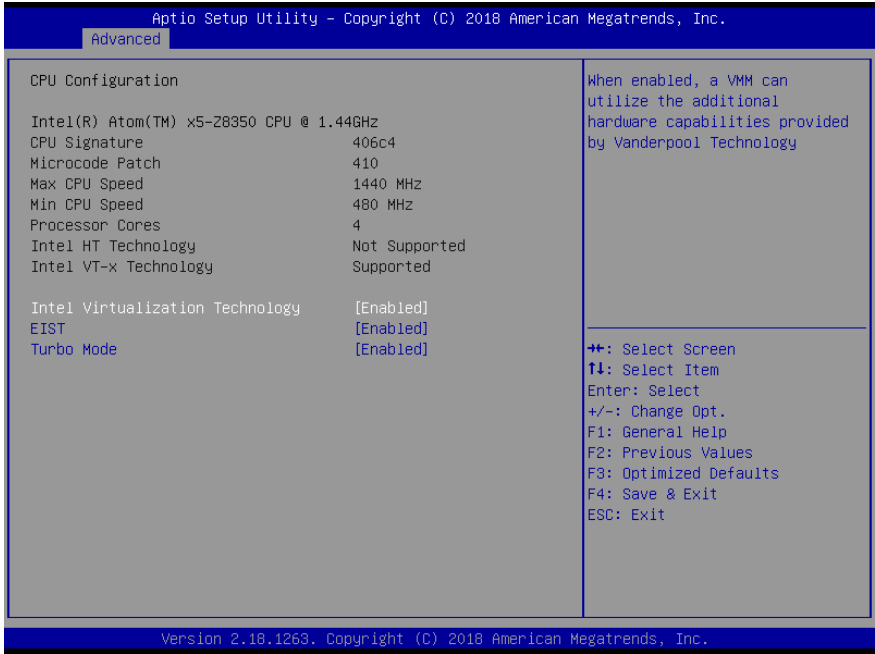
### 3.3 Setup Submenu: Main



### 3.4 Setup Submenu: Advanced



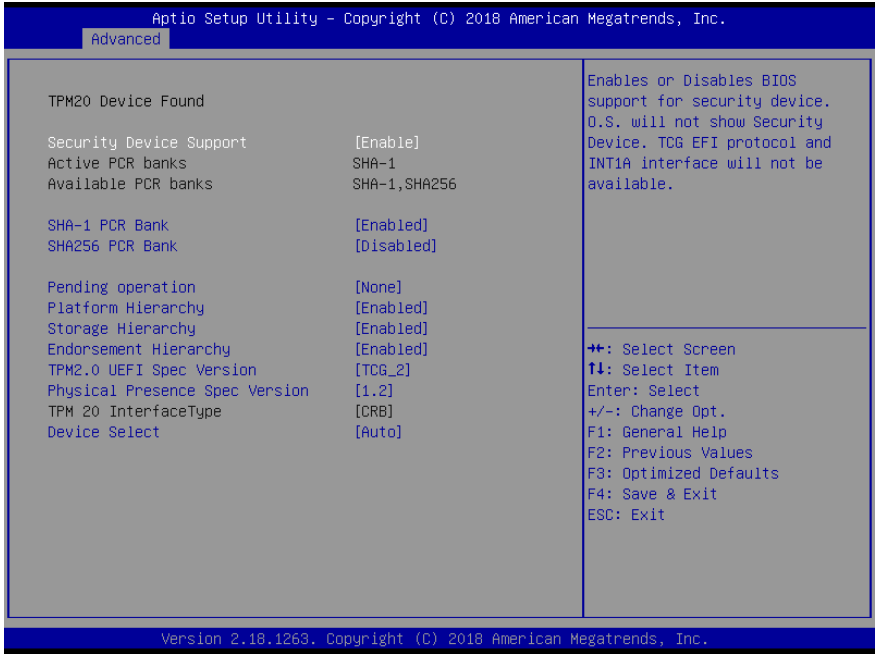
### 3.4.1 Advanced: CPU Configuration



Options summary:

Intel Virtualization Technology	Disabled	Optimal Default
	Enabled	
When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.		
EIST	Disabled	Optimal Default
	Enabled	
Enable/Disable Intel SpeedStep		
Turbo Mode	Disabled	Optimal Default
	Enabled	
Turbo Mode		

### 3.4.2 Advanced: Trusted Computing



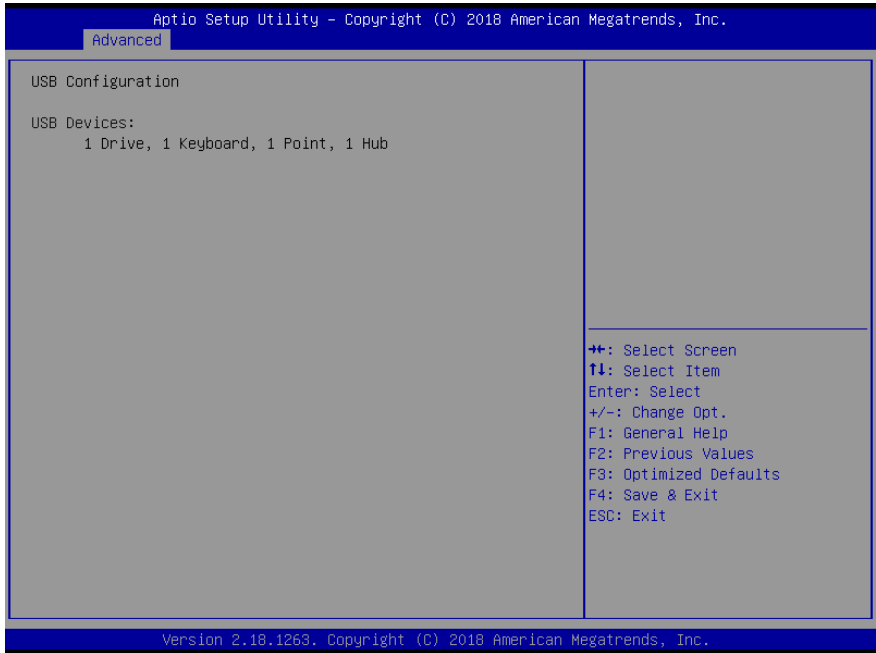
Options summary:

Security Device Support	Disabled	Optimal Default
	Enabled	
Enable/Disable Security Device. NOTE: Your Computer will reboot during restart in order to change State of the Device.		
SHA-1 PCR Bank	Disabled	Optimal Default
	Enabled	
Enable or Disable SHA-1 PCR Bank		
SHA256 PCR Bank	Disabled	Optimal Default
	Enabled	
Enable or Disable SHA256 PCR Bank		
Pending Operation	TPM Clear	Optimal Default
	None	
Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change State of Security Device.		
Platform Hierarchy	Disabled	Optimal Default
	Enabled	

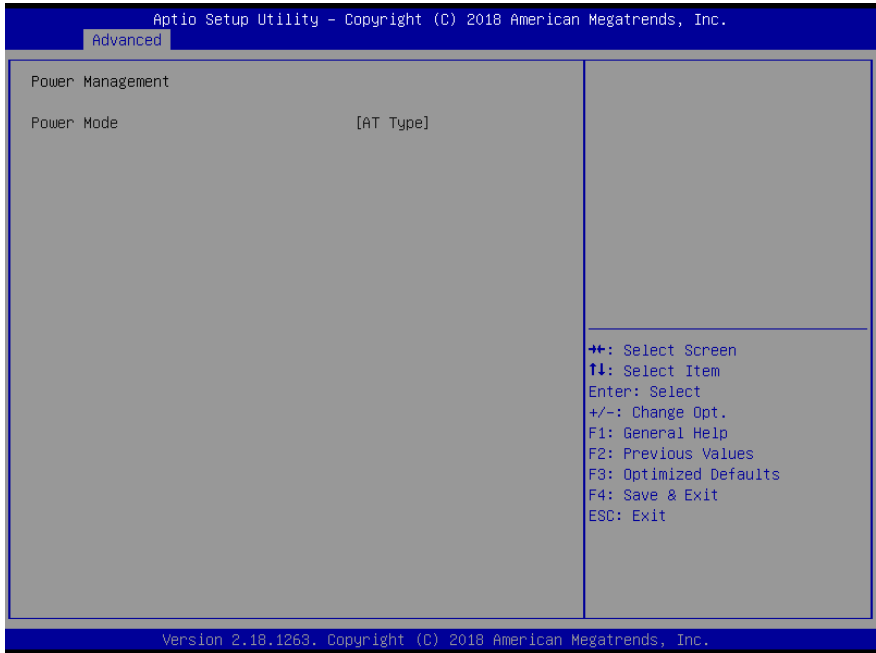
Enable or Disable Platform Hierarchy		
Storage Hierarchy	Disabled	Optimal Default
	Enabled	
Enable or Disable Storage Hierarchy		
Endorsement Hierarchy	Disabled	Optimal Default
	Enabled	
Enable or Disable Endorsement Hierarchy		
TPM2.0 UEFI Spec Version	TCG_2	Optimal Default
	TCG_1_2	
Select the TCG2 Spec Version Support, TCG_1_2: the Compatible mode for Win8/Win10, TCG_2: Support new TCG2 protocol and event format for Win10 or later		
Physical presence Spec Version	1.3	Optimal Default
	1.2	
Select to Tell O.S. to support PPI Spec Version 1.2 or 1.3. Note some HCK tests might not support 1.3.		
TPM 20 InterfaceType	TIS	Optimal Default
	CRB	
Select the Communication Interface to TPM 20 Device.		
Device Select	Auto	Optimal Default
	TPM 1.2	
	TPM 2.0	
TPM 1.2 will restrict support to TPM 1.2 devices, TPM 2.0 will restrict support to TPM 2.0 devices, Auto will support both with the default set to TPM 2.0 devices if not found, TPM 1.2 devices will be enumerated		



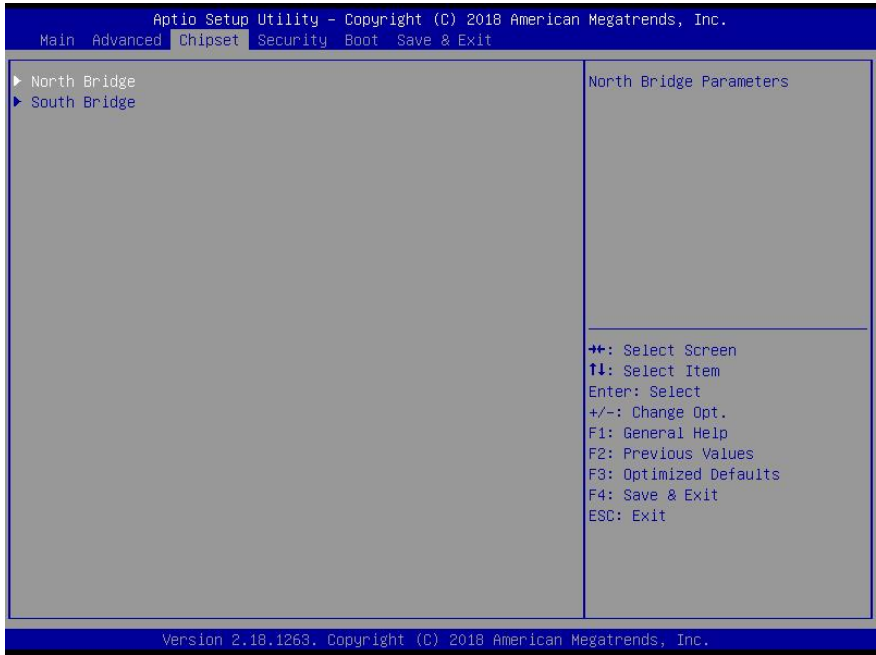
### 3.4.3 Advanced: USB Configuration



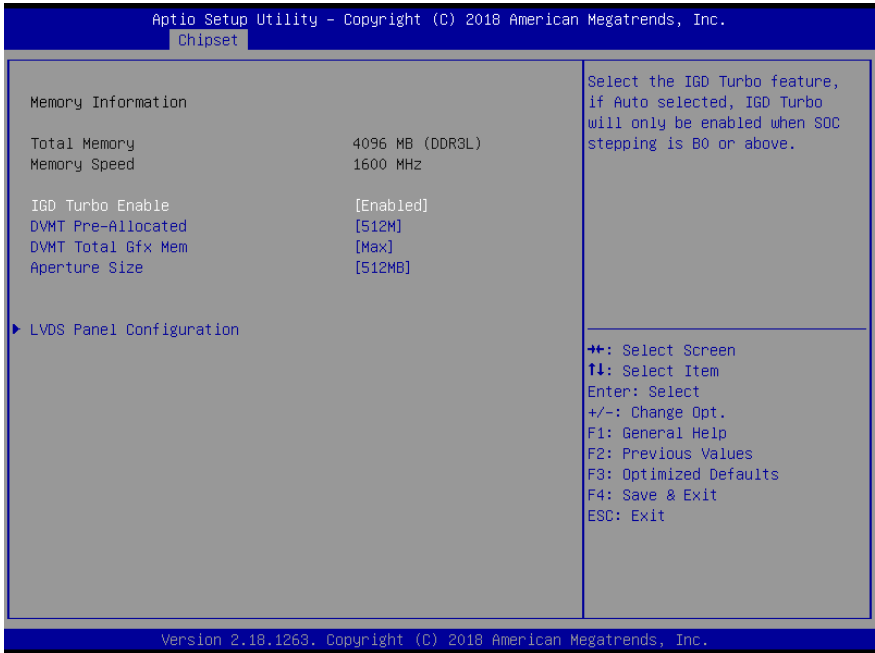
### 3.4.4 Advanced: Power Management



### 3.5 Setup submenu: Chipset



### 3.5.1 Chipset: North Bridge

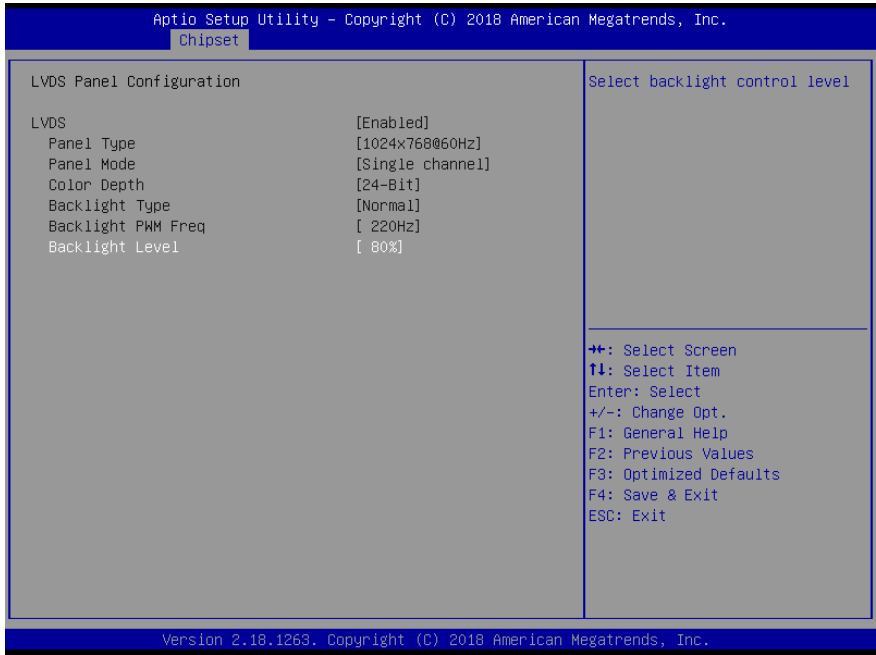


Options summary:

IGD Turbo Enable	Auto	Optimal Default
	Disabled	
	Enabled	
Enable or Disable IGD Turbo		
DVMT Pre-Allocated	32M	
	64M	
	96M	
	128M	
	160M	
	192M	
	224M	
	256M	
	288M	
	320M	
	352M	
384M		

	416M	Optimal Default
	448M	
	480M	
	512M	
Select DVMT5.0 Pre-Allocated(Fixed) Graphics Memory size used by the Internal Graphics Device		
DVMT Total Gfx Mem	128M	Optimal Default
	256M	
	Max	
Select DVMT5.0 Total Graphics Memory size used by the Internal Graphics Device		
Aperture Size	128M	Optimal Default
	256M	
	512M	
Select the Aperture Size		

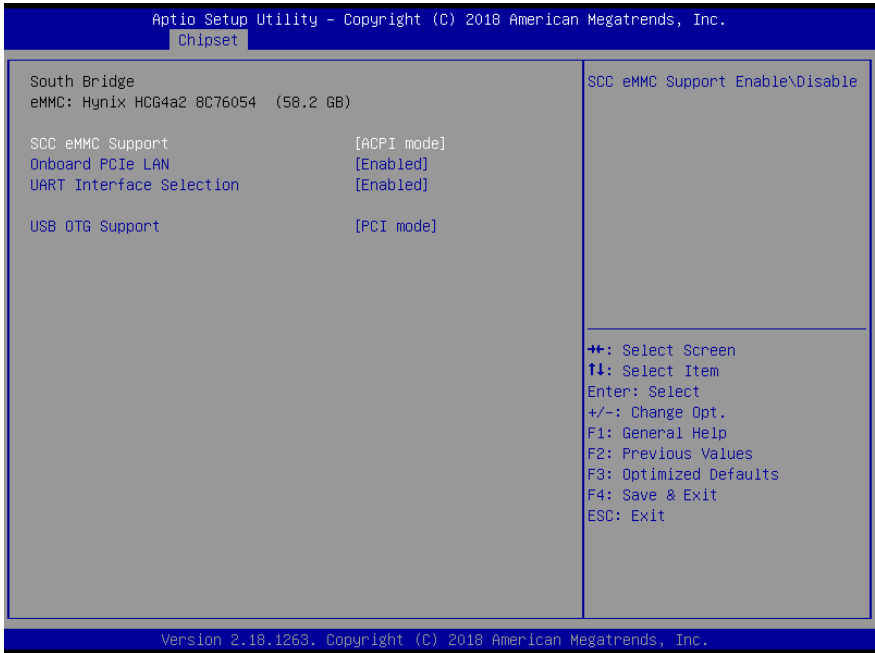
### 3.5.1.1 North Bridge: LVDS Panel Configuration



Options summary:

Backlight Level	10%	Optimal Default
	20%	
	30%	
	40%	
	50%	
	60%	
	70%	
	80%	
	90%	
	100%	
Select backlight control level		

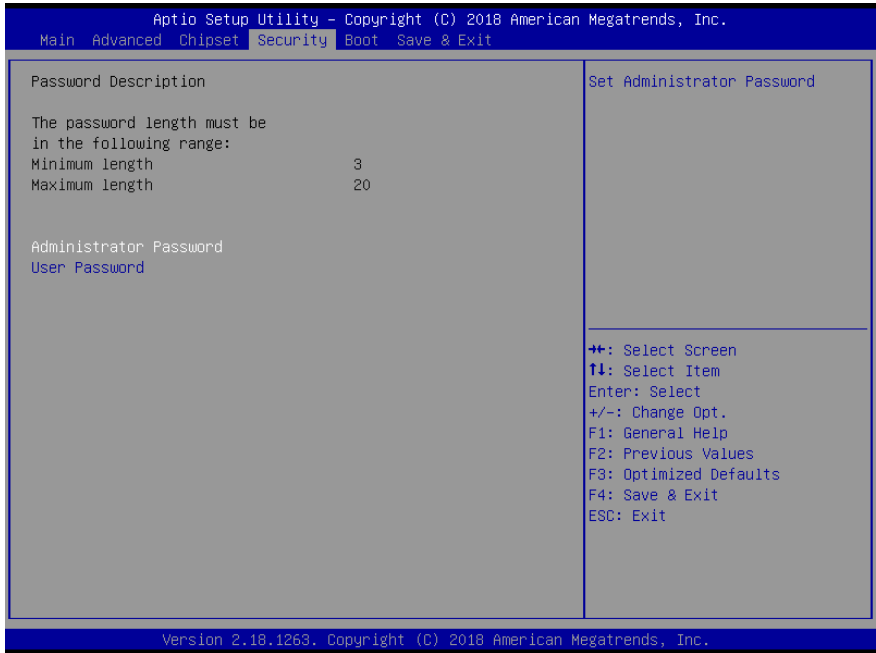
### 3.5.2 Chipset: South Bridge



Options summary:

SCC eMMC Support	ACPI mode	Optimal Default
	PCI mode	
	Disabled	
Enable/Disable SCC eMMC Support		
Onboard PCIe LAN	Enabled	Optimal Default
	Disabled	
Enable or Disable the PCI Express Port 1 in the Chipset		
MUART Interface Selection	Disabled	Optimal Default
	Enabled	
Select which UART interface to use		
USB OTG Support	Auto	Optimal Default
	ACPI mode	
	PCI mode	
	Disabled	
Enable/Disable USB OTG Support		

## 3.6 Setup submenu: Security



### Change User/Administrator Password

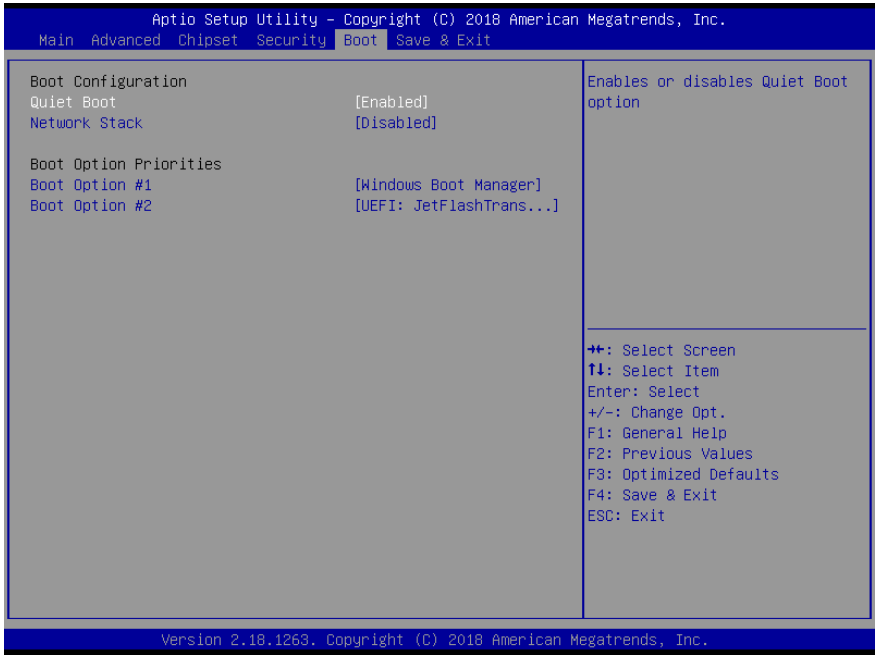
You can set a User Password once an Administrator Password. The password will be required during boot up, or when the user enters the Setup utility. Please Note that a User Password does not provide access to many of the features in the Setup utility. Select the password you wish to set, press Enter to open a dialog box to enter your password (you can enter no more than six letters or numbers). Press Enter to confirm your entry, after which you will be prompted to retype your password for a final confirmation. Press Enter again after you have retyped it correctly.

### Removing the Password

Highlight this item and type in the current password. At the next dialog box press Enter to disable password protection.



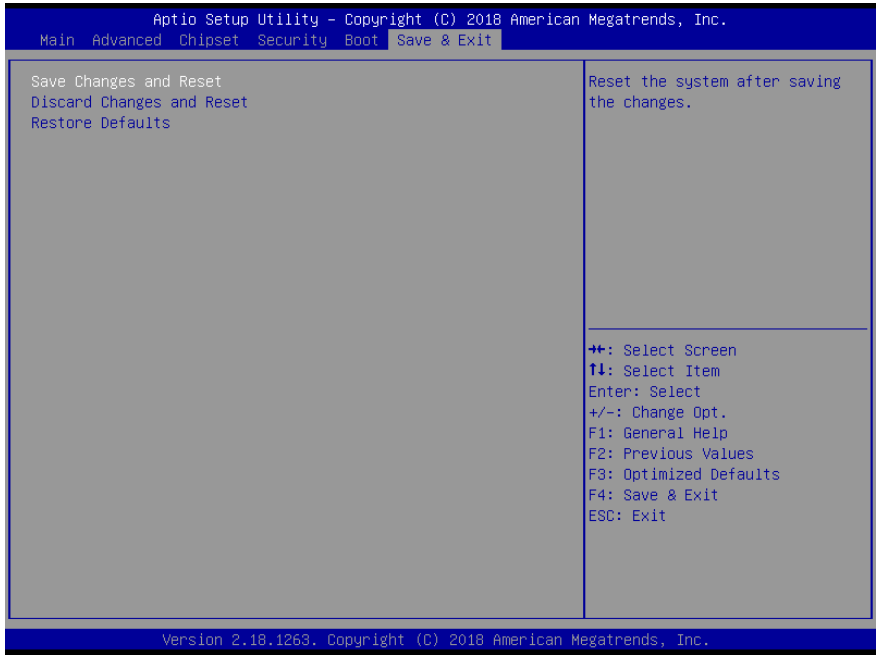
### 3.7 Setup submenu: Boot



Options summary:

Quiet Boot	Disabled	Optimal Default
	Enabled	
Enable or Disable Quiet Boot option		
Network Stack	Disabled	Optimal Default
	Enabled	
Enable/Disable UEFI Network Stack		

### 3.8 Setup submenu: Save & Exit



# Chapter 4

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Drivers Installation & Touchscreen Settings

## 4.1 Product CD/DVD

---

The OMNI-3155-UP comes with a product DVD that contains all the drivers and utilities you need to setup your product. Insert the DVD and follow the steps in the autorun program to install the drivers.

In case the program does not start, follow the sequence below to install the drivers.

### Step 1 – Install DriverPackage

1. Open the **Step1–DriverPackage** folder
2. Open the **Setup.exe** file
3. Follow the installation instructions
4. Drivers should be installed automatically
5. If the drivers don't install, copy the entire **Step1–DriverPackage** folder to your computer's C: drive, open the **Setup.exe** file and follow the instructions. The drivers should then install.

### Step 2 – Install TrustExecutionEngine Driver

1. Open the **Step2-TrustExecutionEngine** folder
2. Open the **SetupTXE.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

### Step 3 – Install USBHub Driver

1. Open the **Step3–USBHub** folder
2. Open the **.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

#### Step 4 – Install LAN Drivers

1. Open the **Step4-LAN** folder and select your OS
2. Open the **setup.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

#### Step 5 – Install PenMount Touch 6000 Series Driver (Resistive touchscreen only)

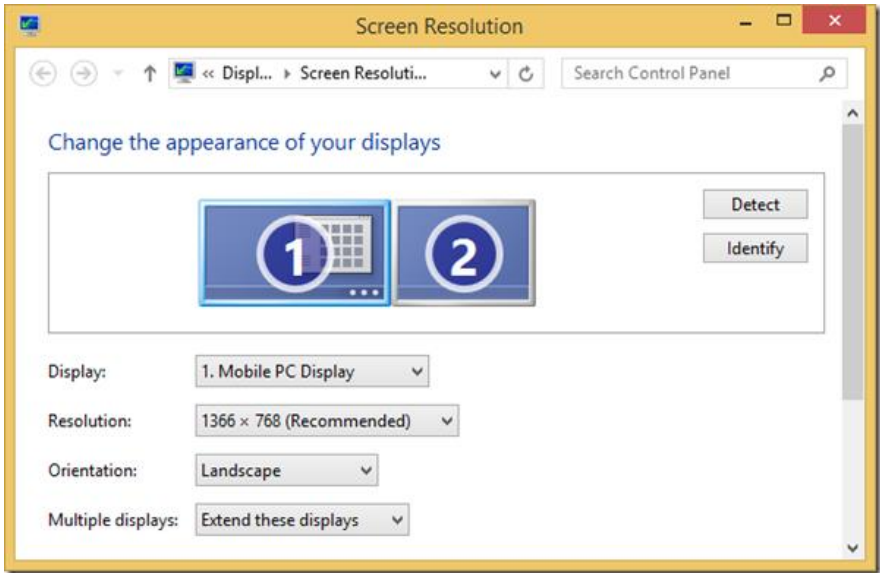
1. Open the **Step5–PenMount Touch 6000** folder
2. Open the **Setup.exe** file
3. Follow the instructions
4. Drivers will be installed automatically

\* Projected Capacitive Touch does not require a driver to be installed.

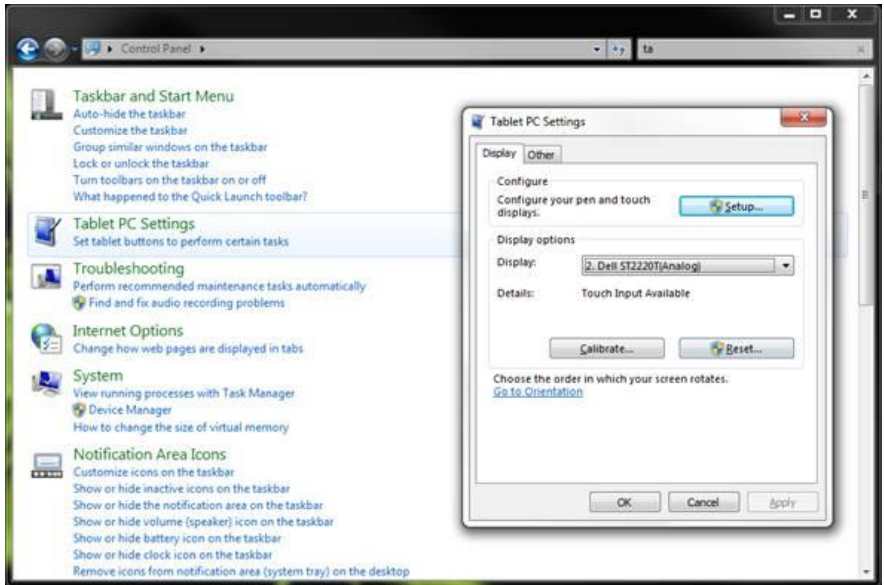
## 4.2 PCAP Dual Monitor Touch Settings

When two panels are used, they can set to be the primary and secondary display. The instruction below shows how this can be done:

1. Go to Display Panel and choose your preferred primary display.



- Go to **Tablet PC Settings** in **Control Panel**. Under **Display options**, select the primary display from step 1. Apply the changes and exit.



\*Do NOT calibrate the screen on your own. Doing so might disrupt the device's factory calibration

# Appendix A




































---



































I/O Information




































## A.1 I/O Address Map



































Note: There is no PS/2 interface on the OMNI-BT series, hence the exclamation marks

- ▼  Input/output (IO)
  -  [0000000000000000 - 000000000000006F] PCI Express Root Complex
  -  [0000000000000020 - 0000000000000021] Programmable interrupt controller
  -  [0000000000000024 - 0000000000000025] Programmable interrupt controller
  -  [0000000000000028 - 0000000000000029] Programmable interrupt controller
  -  [000000000000002C - 000000000000002D] Programmable interrupt controller
  -  [0000000000000030 - 0000000000000031] Programmable interrupt controller
  -  [0000000000000034 - 0000000000000035] Programmable interrupt controller
  -  [0000000000000038 - 0000000000000039] Programmable interrupt controller
  -  [000000000000003C - 000000000000003D] Programmable interrupt controller
  -  [0000000000000040 - 0000000000000043] System timer
  -  [000000000000004E - 000000000000004F] Motherboard resources
  -  [0000000000000050 - 0000000000000053] System timer
  -  [0000000000000061 - 0000000000000061] Motherboard resources
  -  [0000000000000063 - 0000000000000063] Motherboard resources
  -  [0000000000000065 - 0000000000000065] Motherboard resources
  -  [0000000000000067 - 0000000000000067] Motherboard resources
  -  [0000000000000070 - 0000000000000070] Motherboard resources
  -  [0000000000000070 - 0000000000000077] System CMOS/real time clock
  -  [0000000000000078 - 000000000000CF7] PCI Express Root Complex
  -  [0000000000000080 - 000000000000008F] Motherboard resources
  -  [0000000000000092 - 0000000000000092] Motherboard resources
  -  [00000000000000A0 - 00000000000000A1] Programmable interrupt controller
  -  [00000000000000A4 - 00000000000000A5] Programmable interrupt controller
  -  [00000000000000A8 - 00000000000000A9] Programmable interrupt controller
  -  [00000000000000AC - 00000000000000AD] Programmable interrupt controller
  -  [00000000000000B0 - 00000000000000B1] Programmable interrupt controller
  -  [00000000000000B2 - 00000000000000B3] Motherboard resources
  -  [00000000000000B4 - 00000000000000B5] Programmable interrupt controller
  -  [00000000000000B8 - 00000000000000B9] Programmable interrupt controller
  -  [00000000000000BC - 00000000000000BD] Programmable interrupt controller
  -   [00000000000003F8 - 00000000000003FF] Communications Port (COM1)
  -  [0000000000000400 - 000000000000047F] Motherboard resources
  -  [00000000000004D0 - 00000000000004D1] Programmable interrupt controller

	[000000000000030 - 000000000000031]	Programmable interrupt controller
	[000000000000034 - 000000000000035]	Programmable interrupt controller
	[000000000000038 - 000000000000039]	Programmable interrupt controller
	[00000000000003C - 00000000000003D]	Programmable interrupt controller
	[000000000000040 - 000000000000043]	System timer
	[00000000000004E - 00000000000004F]	Motherboard resources
	[000000000000050 - 000000000000053]	System timer
	[000000000000061 - 000000000000061]	Motherboard resources
	[000000000000063 - 000000000000063]	Motherboard resources
	[000000000000065 - 000000000000065]	Motherboard resources
	[000000000000067 - 000000000000067]	Motherboard resources
	[000000000000070 - 000000000000070]	Motherboard resources
	[000000000000070 - 000000000000077]	System CMOS/real time clock
	[000000000000078 - 000000000000CF7]	PCI Express Root Complex
	[000000000000080 - 00000000000008F]	Motherboard resources
	[000000000000092 - 000000000000092]	Motherboard resources
	[0000000000000A0 - 0000000000000A1]	Programmable interrupt controller
	[0000000000000A4 - 0000000000000A5]	Programmable interrupt controller
	[0000000000000A8 - 0000000000000A9]	Programmable interrupt controller
	[0000000000000AC - 0000000000000AD]	Programmable interrupt controller
	[0000000000000B0 - 0000000000000B1]	Programmable interrupt controller
	[0000000000000B2 - 0000000000000B3]	Motherboard resources
	[0000000000000B4 - 0000000000000B5]	Programmable interrupt controller
	[0000000000000B8 - 0000000000000B9]	Programmable interrupt controller
	[0000000000000BC - 0000000000000BD]	Programmable interrupt controller
	[0000000000003F8 - 0000000000003FF]	Communications Port (COM1)
	[000000000000400 - 00000000000047F]	Motherboard resources
	[0000000000004D0 - 0000000000004D1]	Programmable interrupt controller
	[000000000000500 - 0000000000005FE]	Motherboard resources
	[000000000000680 - 00000000000069F]	Motherboard resources
	[000000000000D00 - 000000000000FFFF]	PCI Express Root Complex
	[000000000000E00 - 000000000000E0FF]	Realtek PCIe GBE Family Controller
	[000000000000E00 - 000000000000EFFF]	PCI Express Root Port
	[000000000000F00 - 000000000000F03F]	Intel(R) HD Graphics


































## A.2 Memory Address Map



































Memory	
	[0000000000A0000 - 0000000000BFFFF] PCI Express Root Complex
	[0000000000C0000 - 0000000000DFFFF] PCI Express Root Complex
	[0000000000E0000 - 0000000000FFFFFF] PCI Express Root Complex
	[000000020000000 - 0000000201FFFFFF] Intel SST Audio Device (WDM)
	[000000020000000 - 0000000201FFFFFF] PCI Express Root Complex
	[00000005ED00001 - 00000007ED00000] PCI Express Root Complex
	[00000007FF00000 - 00000007FF00FFF] Trusted Platform Module 2.0
	[000000080000000 - 00000009FFFFFFF] Intel(R) HD Graphics
	[000000080000000 - 0000000DFFFFFFF] PCI Express Root Complex
	[00000000A0000000 - 00000000A0FFFFFFF] Intel(R) HD Graphics
	[00000000A1000000 - 00000000A11FFFFFF] USB Synopsys Controller
	[00000000A1200000 - 00000000A13FFFFFF] Intel SST Audio Device (WDM)
	[00000000A1400000 - 00000000A14FFFFFF] Intel(R) Trusted Execution Engine Interface
	[00000000A1500000 - 00000000A15FFFFFF] Intel(R) Trusted Execution Engine Interface
	[00000000A1600000 - 00000000A1603FFF] Realtek PCIe GBE Family Controller
	[00000000A1600000 - 00000000A16FFFFFF] PCI Express Root Port
	[00000000A1604000 - 00000000A1604FFF] Realtek PCIe GBE Family Controller
	[00000000A1700000 - 00000000A170FFFF] Intel(R) USB 3.0 eXtensible Host Controller - 1.0 (Microsoft)
	[00000000A1710000 - 00000000A1713FFF] Intel(R) Serial IO DMA Controller
	[00000000A1714000 - 00000000A1714FFF] Motherboard resources
	[00000000A1715000 - 00000000A1715FFF] Intel(R) Serial IO I2C ES Controller
	[00000000A1716000 - 00000000A1716FFF] Motherboard resources
	[00000000A1717000 - 00000000A1717FFF] Intel(R) Serial IO I2C ES Controller
	[00000000A1718000 - 00000000A1718FFF] Motherboard resources
	[00000000A1719000 - 00000000A1719FFF] Intel(R) Serial IO I2C ES Controller
	[00000000A171A000 - 00000000A171AFFF] Motherboard resources
	[00000000A171B000 - 00000000A171BFFF] Intel(R) Serial IO I2C ES Controller
	[00000000A171C000 - 00000000A171CFFF] Motherboard resources
	[00000000A171D000 - 00000000A171DFFF] Intel SST Audio Device (WDM)
	[00000000A171E000 - 00000000A171EFFF] Motherboard resources
	[00000000A171F000 - 00000000A171FFFF] Intel SD Host Controller
	[00000000E0000000 - 00000000EFFFFFFF] Motherboard resources
	[00000000E00000D0 - 00000000E00000DF] Intel(R) Sideband Fabric Device



































	[00000000A1600000 - 00000000A1603FFF]	Realtek PCIe GBE Family Controller
	[00000000A1600000 - 00000000A16FFFFF]	PCI Express Root Port
	[00000000A1604000 - 00000000A1604FFF]	Realtek PCIe GBE Family Controller
	[00000000A1700000 - 00000000A170FFFF]	Intel(R) USB 3.0 eXtensible Host Controller - 1.0 (Microsoft)
	[00000000A1710000 - 00000000A1713FFF]	Intel(R) Serial IO DMA Controller
	[00000000A1714000 - 00000000A1714FFF]	Motherboard resources
	[00000000A1715000 - 00000000A1715FFF]	Intel(R) Serial IO I2C ES Controller
	[00000000A1716000 - 00000000A1716FFF]	Motherboard resources
	[00000000A1717000 - 00000000A1717FFF]	Intel(R) Serial IO I2C ES Controller
	[00000000A1718000 - 00000000A1718FFF]	Motherboard resources
	[00000000A1719000 - 00000000A1719FFF]	Intel(R) Serial IO I2C ES Controller
	[00000000A171A000 - 00000000A171AFFF]	Motherboard resources
	[00000000A171B000 - 00000000A171BFFF]	Intel(R) Serial IO I2C ES Controller
	[00000000A171C000 - 00000000A171CFFF]	Motherboard resources
	[00000000A171D000 - 00000000A171DFFF]	Intel SST Audio Device (WDM)
	[00000000A171E000 - 00000000A171EFFF]	Motherboard resources
	[00000000A171F000 - 00000000A171FFFF]	Intel SD Host Controller
	[00000000E0000000 - 00000000EFFFFFFF]	Motherboard resources
	[00000000E0000D00 - 00000000E0000DF]	Intel(R) Sideband Fabric Device
	[00000000FEA00000 - 00000000FEAFFFFF]	Motherboard resources
	[00000000FED00000 - 00000000FED003FF]	High precision event timer
	[00000000FED01000 - 00000000FED01FFF]	Motherboard resources
	[00000000FED03000 - 00000000FED03FFF]	Motherboard resources
	[00000000FED06000 - 00000000FED06FFF]	Motherboard resources
	[00000000FED08000 - 00000000FED09FFF]	Motherboard resources
	[00000000FED1C000 - 00000000FED1CFFF]	Motherboard resources
	[00000000FED80000 - 00000000FED87FFF]	Intel Serial IO GPIO Controller
	[00000000FED80000 - 00000000FEDBFFFF]	Motherboard resources
	[00000000FED88000 - 00000000FED8FFFF]	Intel Serial IO GPIO Controller
	[00000000FED90000 - 00000000FED97FFF]	Intel Serial IO GPIO Controller
	[00000000FED98000 - 00000000FED9FFFF]	Intel Serial IO GPIO Controller
	[00000000FEDA0000 - 00000000FEDA7FFF]	Intel Serial IO GPIO Controller
	[00000000FEE00000 - 00000000FEEFFFFF]	Motherboard resources
	[00000000FF000000 - 00000000FFFFFFFF]	Legacy device



































## A.3 IRQ Mapping Chart

### Interrupt request (IRQ)



































 (ISA) 0x00000000 (00)	System timer
 (ISA) 0x00000004 (04)	Communications Port (COM1)
 (ISA) 0x00000008 (08)	High precision event timer
 (ISA) 0x00000018 (24)	Intel SST Audio Device (WDM)
 (ISA) 0x00000019 (25)	Intel SST Audio Device (WDM)
 (ISA) 0x0000001A (26)	Intel SST Audio Device (WDM)
 (ISA) 0x0000001B (27)	Intel SST Audio Device (WDM)
 (ISA) 0x0000001C (28)	Intel SST Audio Device (WDM)
 (ISA) 0x0000001D (29)	Intel SST Audio Device (WDM)
 (ISA) 0x00000022 (34)	Intel(R) Serial IO I2C ES Controller
 (ISA) 0x00000024 (36)	Intel(R) Serial IO I2C ES Controller
 (ISA) 0x00000025 (37)	Intel(R) Serial IO I2C ES Controller
 (ISA) 0x00000026 (38)	Intel(R) Serial IO I2C ES Controller
 (ISA) 0x0000002B (43)	Intel(R) Serial IO DMA Controller
 (ISA) 0x0000002D (45)	Intel SD Host Controller
 (ISA) 0x00000030 (48)	Intel Serial IO GPIO Controller
 (ISA) 0x00000031 (49)	Intel Serial IO GPIO Controller
 (ISA) 0x00000032 (50)	Intel Serial IO GPIO Controller
 (ISA) 0x00000036 (54)	Microsoft ACPI-Compliant System
 (ISA) 0x00000037 (55)	Microsoft ACPI-Compliant System
 (ISA) 0x00000038 (56)	Microsoft ACPI-Compliant System
 (ISA) 0x00000039 (57)	Microsoft ACPI-Compliant System
 (ISA) 0x0000003A (58)	Microsoft ACPI-Compliant System
 (ISA) 0x0000003B (59)	Microsoft ACPI-Compliant System
 (ISA) 0x0000003C (60)	Microsoft ACPI-Compliant System
 (ISA) 0x0000003D (61)	Microsoft ACPI-Compliant System
 (ISA) 0x0000003E (62)	Microsoft ACPI-Compliant System
 (ISA) 0x0000003F (63)	Microsoft ACPI-Compliant System
 (ISA) 0x00000040 (64)	Microsoft ACPI-Compliant System
 (ISA) 0x00000041 (65)	Microsoft ACPI-Compliant System
 (ISA) 0x00000042 (66)	Microsoft ACPI-Compliant System
 (ISA) 0x00000043 (67)	Microsoft ACPI-Compliant System
 (ISA) 0x00000044 (68)	Microsoft ACPI-Compliant System



































 (ISA) 0x00000045 (69)	Microsoft ACPI-Compliant System
 (ISA) 0x00000046 (70)	Microsoft ACPI-Compliant System
 (ISA) 0x00000047 (71)	Microsoft ACPI-Compliant System
 (ISA) 0x00000048 (72)	Microsoft ACPI-Compliant System
 (ISA) 0x00000049 (73)	Microsoft ACPI-Compliant System
 (ISA) 0x0000004A (74)	Microsoft ACPI-Compliant System
 (ISA) 0x0000004B (75)	Microsoft ACPI-Compliant System
 (ISA) 0x0000004C (76)	Microsoft ACPI-Compliant System
 (ISA) 0x0000004D (77)	Microsoft ACPI-Compliant System
 (ISA) 0x0000004E (78)	Microsoft ACPI-Compliant System
 (ISA) 0x0000004F (79)	Microsoft ACPI-Compliant System
 (ISA) 0x00000050 (80)	Microsoft ACPI-Compliant System
 (ISA) 0x00000051 (81)	Microsoft ACPI-Compliant System
 (ISA) 0x00000052 (82)	Microsoft ACPI-Compliant System
 (ISA) 0x00000053 (83)	Microsoft ACPI-Compliant System
 (ISA) 0x00000054 (84)	Microsoft ACPI-Compliant System
 (ISA) 0x00000055 (85)	Microsoft ACPI-Compliant System
 (ISA) 0x00000056 (86)	Microsoft ACPI-Compliant System
 (ISA) 0x00000057 (87)	Microsoft ACPI-Compliant System
 (ISA) 0x00000058 (88)	Microsoft ACPI-Compliant System
 (ISA) 0x00000059 (89)	Microsoft ACPI-Compliant System
 (ISA) 0x0000005A (90)	Microsoft ACPI-Compliant System
 (ISA) 0x0000005B (91)	Intel Serial IO GPIO Controller
 (ISA) 0x0000005B (91)	Microsoft ACPI-Compliant System
 (ISA) 0x0000005C (92)	Microsoft ACPI-Compliant System
 (ISA) 0x0000005D (93)	Microsoft ACPI-Compliant System
 (ISA) 0x0000005E (94)	Microsoft ACPI-Compliant System
 (ISA) 0x0000005F (95)	Microsoft ACPI-Compliant System
 (ISA) 0x00000060 (96)	Microsoft ACPI-Compliant System
 (ISA) 0x00000061 (97)	Microsoft ACPI-Compliant System
 (ISA) 0x00000062 (98)	Microsoft ACPI-Compliant System
 (ISA) 0x00000063 (99)	Microsoft ACPI-Compliant System
 (ISA) 0x00000064 (100)	Microsoft ACPI-Compliant System
 (ISA) 0x00000065 (101)	Microsoft ACPI-Compliant System



































 (ISA) 0x00000066 (102)	Microsoft ACPI-Compliant System
 (ISA) 0x00000067 (103)	Microsoft ACPI-Compliant System
 (ISA) 0x00000068 (104)	Microsoft ACPI-Compliant System
 (ISA) 0x00000069 (105)	Microsoft ACPI-Compliant System
 (ISA) 0x0000006A (106)	Microsoft ACPI-Compliant System
 (ISA) 0x0000006B (107)	Microsoft ACPI-Compliant System
 (ISA) 0x0000006C (108)	Intel Serial IO GPIO Controller
 (ISA) 0x0000006C (108)	Microsoft ACPI-Compliant System
 (ISA) 0x0000006D (109)	Microsoft ACPI-Compliant System
 (ISA) 0x0000006E (110)	Microsoft ACPI-Compliant System
 (ISA) 0x0000006F (111)	Microsoft ACPI-Compliant System
 (ISA) 0x00000070 (112)	Microsoft ACPI-Compliant System
 (ISA) 0x00000071 (113)	Microsoft ACPI-Compliant System
 (ISA) 0x00000072 (114)	Microsoft ACPI-Compliant System
 (ISA) 0x00000073 (115)	Microsoft ACPI-Compliant System
 (ISA) 0x00000074 (116)	Microsoft ACPI-Compliant System
 (ISA) 0x00000075 (117)	Microsoft ACPI-Compliant System
 (ISA) 0x00000076 (118)	Microsoft ACPI-Compliant System
 (ISA) 0x00000077 (119)	Microsoft ACPI-Compliant System
 (ISA) 0x00000078 (120)	Microsoft ACPI-Compliant System
 (ISA) 0x00000079 (121)	Microsoft ACPI-Compliant System
 (ISA) 0x0000007A (122)	Microsoft ACPI-Compliant System
 (ISA) 0x0000007B (123)	Microsoft ACPI-Compliant System
 (ISA) 0x0000007C (124)	Microsoft ACPI-Compliant System
 (ISA) 0x0000007D (125)	Microsoft ACPI-Compliant System
 (ISA) 0x0000007E (126)	Microsoft ACPI-Compliant System
 (ISA) 0x0000007F (127)	Microsoft ACPI-Compliant System
 (ISA) 0x00000080 (128)	Microsoft ACPI-Compliant System
 (ISA) 0x00000081 (129)	Microsoft ACPI-Compliant System
 (ISA) 0x00000082 (130)	Microsoft ACPI-Compliant System
 (ISA) 0x00000083 (131)	Microsoft ACPI-Compliant System
 (ISA) 0x00000084 (132)	Microsoft ACPI-Compliant System
 (ISA) 0x00000085 (133)	Microsoft ACPI-Compliant System
 (ISA) 0x00000086 (134)	Microsoft ACPI-Compliant System



































 (ISA) 0x00000087 (135)	Microsoft ACPI-Compliant System
 (ISA) 0x00000088 (136)	Microsoft ACPI-Compliant System
 (ISA) 0x00000089 (137)	Microsoft ACPI-Compliant System
 (ISA) 0x0000008A (138)	Microsoft ACPI-Compliant System
 (ISA) 0x0000008B (139)	Microsoft ACPI-Compliant System
 (ISA) 0x0000008C (140)	Microsoft ACPI-Compliant System
 (ISA) 0x0000008D (141)	Microsoft ACPI-Compliant System
 (ISA) 0x0000008E (142)	Microsoft ACPI-Compliant System
 (ISA) 0x0000008F (143)	Microsoft ACPI-Compliant System
 (ISA) 0x00000090 (144)	Microsoft ACPI-Compliant System
 (ISA) 0x00000091 (145)	Microsoft ACPI-Compliant System
 (ISA) 0x00000092 (146)	Microsoft ACPI-Compliant System
 (ISA) 0x00000093 (147)	Microsoft ACPI-Compliant System
 (ISA) 0x00000094 (148)	Microsoft ACPI-Compliant System
 (ISA) 0x00000095 (149)	Microsoft ACPI-Compliant System
 (ISA) 0x00000096 (150)	Microsoft ACPI-Compliant System
 (ISA) 0x00000097 (151)	Microsoft ACPI-Compliant System
 (ISA) 0x00000098 (152)	Microsoft ACPI-Compliant System
 (ISA) 0x00000099 (153)	Microsoft ACPI-Compliant System
 (ISA) 0x0000009A (154)	Microsoft ACPI-Compliant System
 (ISA) 0x0000009B (155)	Microsoft ACPI-Compliant System
 (ISA) 0x0000009C (156)	Microsoft ACPI-Compliant System
 (ISA) 0x0000009D (157)	Microsoft ACPI-Compliant System
 (ISA) 0x0000009E (158)	Microsoft ACPI-Compliant System
 (ISA) 0x0000009F (159)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A0 (160)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A1 (161)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A2 (162)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A3 (163)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A4 (164)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A5 (165)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A6 (166)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A7 (167)	Microsoft ACPI-Compliant System
 (ISA) 0x000000A8 (168)	Microsoft ACPI-Compliant System







































































 (ISA) 0x000000A9 (169)	Microsoft ACPI-Compliant System
 (ISA) 0x000000AA (170)	Microsoft ACPI-Compliant System
 (ISA) 0x000000AB (171)	Microsoft ACPI-Compliant System
 (ISA) 0x000000AC (172)	Microsoft ACPI-Compliant System
 (ISA) 0x000000AD (173)	Microsoft ACPI-Compliant System
 (ISA) 0x000000AE (174)	Microsoft ACPI-Compliant System
 (ISA) 0x000000AF (175)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B0 (176)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B1 (177)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B2 (178)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B3 (179)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B4 (180)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B5 (181)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B6 (182)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B7 (183)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B8 (184)	Microsoft ACPI-Compliant System
 (ISA) 0x000000B9 (185)	Microsoft ACPI-Compliant System
 (ISA) 0x000000BA (186)	Microsoft ACPI-Compliant System
 (ISA) 0x000000BB (187)	Microsoft ACPI-Compliant System
 (ISA) 0x000000BC (188)	Microsoft ACPI-Compliant System
 (ISA) 0x000000BD (189)	Microsoft ACPI-Compliant System
 (ISA) 0x000000BE (190)	Microsoft ACPI-Compliant System
 (ISA) 0x000000BF (191)	Microsoft ACPI-Compliant System
 (ISA) 0x000000C0 (192)	Microsoft ACPI-Compliant System
 (ISA) 0x000000C1 (193)	Microsoft ACPI-Compliant System
 (ISA) 0x000000C2 (194)	Microsoft ACPI-Compliant System
 (ISA) 0x000000C3 (195)	Microsoft ACPI-Compliant System
 (ISA) 0x000000C4 (196)	Microsoft ACPI-Compliant System
 (ISA) 0x000000C5 (197)	Microsoft ACPI-Compliant System
 (ISA) 0x000000C6 (198)	Microsoft ACPI-Compliant System
 (ISA) 0x000000C7 (199)	Microsoft ACPI-Compliant System
 (ISA) 0x000000C8 (200)	Microsoft ACPI-Compliant System
 (ISA) 0x000000C9 (201)	Microsoft ACPI-Compliant System
 (ISA) 0x000000CA (202)	Microsoft ACPI-Compliant System



































 (ISA) 0x000000CB (203)	Microsoft ACPI-Compliant System
 (ISA) 0x000000CC (204)	Microsoft ACPI-Compliant System
 (ISA) 0x00000100 (256)	Microsoft ACPI-Compliant System
 (ISA) 0x00000101 (257)	Microsoft ACPI-Compliant System
 (ISA) 0x00000102 (258)	Microsoft ACPI-Compliant System
 (ISA) 0x00000103 (259)	Microsoft ACPI-Compliant System
 (ISA) 0x00000104 (260)	Microsoft ACPI-Compliant System
 (ISA) 0x00000105 (261)	Microsoft ACPI-Compliant System
 (ISA) 0x00000106 (262)	Microsoft ACPI-Compliant System
 (ISA) 0x00000107 (263)	Microsoft ACPI-Compliant System
 (ISA) 0x00000108 (264)	Microsoft ACPI-Compliant System
 (ISA) 0x00000109 (265)	Microsoft ACPI-Compliant System
 (ISA) 0x0000010A (266)	Microsoft ACPI-Compliant System
 (ISA) 0x0000010B (267)	Microsoft ACPI-Compliant System
 (ISA) 0x0000010C (268)	Microsoft ACPI-Compliant System
 (ISA) 0x0000010D (269)	Microsoft ACPI-Compliant System
 (ISA) 0x0000010E (270)	Microsoft ACPI-Compliant System
 (ISA) 0x0000010F (271)	Microsoft ACPI-Compliant System
 (ISA) 0x00000110 (272)	Microsoft ACPI-Compliant System
 (ISA) 0x00000111 (273)	Microsoft ACPI-Compliant System
 (ISA) 0x00000112 (274)	Microsoft ACPI-Compliant System
 (ISA) 0x00000113 (275)	Microsoft ACPI-Compliant System
 (ISA) 0x00000114 (276)	Microsoft ACPI-Compliant System
 (ISA) 0x00000115 (277)	Microsoft ACPI-Compliant System
 (ISA) 0x00000116 (278)	Microsoft ACPI-Compliant System
 (ISA) 0x00000117 (279)	Microsoft ACPI-Compliant System
 (ISA) 0x00000118 (280)	Microsoft ACPI-Compliant System
 (ISA) 0x00000119 (281)	Microsoft ACPI-Compliant System
 (ISA) 0x0000011A (282)	Microsoft ACPI-Compliant System
 (ISA) 0x0000011B (283)	Microsoft ACPI-Compliant System
 (ISA) 0x0000011C (284)	Microsoft ACPI-Compliant System
 (ISA) 0x0000011D (285)	Microsoft ACPI-Compliant System
 (ISA) 0x0000011E (286)	Microsoft ACPI-Compliant System
 (ISA) 0x0000011F (287)	Microsoft ACPI-Compliant System



































 (ISA) 0x00000120 (288)	Microsoft ACPI-Compliant System
 (ISA) 0x00000121 (289)	Microsoft ACPI-Compliant System
 (ISA) 0x00000122 (290)	Microsoft ACPI-Compliant System
 (ISA) 0x00000123 (291)	Microsoft ACPI-Compliant System
 (ISA) 0x00000124 (292)	Microsoft ACPI-Compliant System
 (ISA) 0x00000125 (293)	Microsoft ACPI-Compliant System
 (ISA) 0x00000126 (294)	Microsoft ACPI-Compliant System
 (ISA) 0x00000127 (295)	Microsoft ACPI-Compliant System
 (ISA) 0x00000128 (296)	Microsoft ACPI-Compliant System
 (ISA) 0x00000129 (297)	Microsoft ACPI-Compliant System
 (ISA) 0x0000012A (298)	Microsoft ACPI-Compliant System
 (ISA) 0x0000012B (299)	Microsoft ACPI-Compliant System
 (ISA) 0x0000012C (300)	Microsoft ACPI-Compliant System
 (ISA) 0x0000012D (301)	Microsoft ACPI-Compliant System
 (ISA) 0x0000012E (302)	Microsoft ACPI-Compliant System
 (ISA) 0x0000012F (303)	Microsoft ACPI-Compliant System
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 (ISA) 0x0000013D (317)	Microsoft ACPI-Compliant System
 (ISA) 0x0000013E (318)	Microsoft ACPI-Compliant System
 (ISA) 0x0000013F (319)	Microsoft ACPI-Compliant System
 (ISA) 0x00000140 (320)	Microsoft ACPI-Compliant System
 (ISA) 0x00000141 (321)	Microsoft ACPI-Compliant System

 (ISA) 0x00000142 (322)	Microsoft ACPI-Compliant System
 (ISA) 0x00000143 (323)	Microsoft ACPI-Compliant System
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 (ISA) 0x0000014E (334)	Microsoft ACPI-Compliant System
 (ISA) 0x0000014F (335)	Microsoft ACPI-Compliant System
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 (ISA) 0x0000015D (349)	Microsoft ACPI-Compliant System
 (ISA) 0x0000015E (350)	Microsoft ACPI-Compliant System
 (ISA) 0x0000015F (351)	Microsoft ACPI-Compliant System
 (ISA) 0x00000160 (352)	Microsoft ACPI-Compliant System
 (ISA) 0x00000161 (353)	Microsoft ACPI-Compliant System
 (ISA) 0x00000162 (354)	Microsoft ACPI-Compliant System
 (ISA) 0x00000163 (355)	Microsoft ACPI-Compliant System


































 (ISA) 0x00000164 (356)	Microsoft ACPI-Compliant System
 (ISA) 0x00000165 (357)	Microsoft ACPI-Compliant System
 (ISA) 0x00000166 (358)	Microsoft ACPI-Compliant System
 (ISA) 0x00000167 (359)	Microsoft ACPI-Compliant System
 (ISA) 0x00000168 (360)	Microsoft ACPI-Compliant System
 (ISA) 0x00000169 (361)	Microsoft ACPI-Compliant System
 (ISA) 0x0000016A (362)	Microsoft ACPI-Compliant System
 (ISA) 0x0000016B (363)	Microsoft ACPI-Compliant System
 (ISA) 0x0000016C (364)	Microsoft ACPI-Compliant System
 (ISA) 0x0000016D (365)	Microsoft ACPI-Compliant System
 (ISA) 0x0000016E (366)	Microsoft ACPI-Compliant System
 (ISA) 0x0000016F (367)	Microsoft ACPI-Compliant System
 (ISA) 0x00000170 (368)	Microsoft ACPI-Compliant System
 (ISA) 0x00000171 (369)	Microsoft ACPI-Compliant System
 (ISA) 0x00000172 (370)	Microsoft ACPI-Compliant System
 (ISA) 0x00000173 (371)	Microsoft ACPI-Compliant System
 (ISA) 0x00000174 (372)	Microsoft ACPI-Compliant System
 (ISA) 0x00000175 (373)	Microsoft ACPI-Compliant System
 (ISA) 0x00000176 (374)	Microsoft ACPI-Compliant System
 (ISA) 0x00000177 (375)	Microsoft ACPI-Compliant System
 (ISA) 0x00000178 (376)	Microsoft ACPI-Compliant System
 (ISA) 0x00000179 (377)	Microsoft ACPI-Compliant System
 (ISA) 0x0000017A (378)	Microsoft ACPI-Compliant System
 (ISA) 0x0000017B (379)	Microsoft ACPI-Compliant System
 (ISA) 0x0000017C (380)	Microsoft ACPI-Compliant System
 (ISA) 0x0000017D (381)	Microsoft ACPI-Compliant System
 (ISA) 0x0000017E (382)	Microsoft ACPI-Compliant System
 (ISA) 0x0000017F (383)	Microsoft ACPI-Compliant System
 (ISA) 0x00000180 (384)	Microsoft ACPI-Compliant System
 (ISA) 0x00000181 (385)	Microsoft ACPI-Compliant System
 (ISA) 0x00000182 (386)	Microsoft ACPI-Compliant System
 (ISA) 0x00000183 (387)	Microsoft ACPI-Compliant System
 (ISA) 0x00000184 (388)	Microsoft ACPI-Compliant System
 (ISA) 0x00000185 (389)	Microsoft ACPI-Compliant System

 (ISA) 0x00000186 (390)	Microsoft ACPI-Compliant System
 (ISA) 0x00000187 (391)	Microsoft ACPI-Compliant System
 (ISA) 0x00000188 (392)	Microsoft ACPI-Compliant System
 (ISA) 0x00000189 (393)	Microsoft ACPI-Compliant System
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 (ISA) 0x0000018E (398)	Microsoft ACPI-Compliant System
 (ISA) 0x0000018F (399)	Microsoft ACPI-Compliant System
 (ISA) 0x00000190 (400)	Microsoft ACPI-Compliant System
 (ISA) 0x00000191 (401)	Microsoft ACPI-Compliant System
 (ISA) 0x00000192 (402)	Microsoft ACPI-Compliant System
 (ISA) 0x00000193 (403)	Microsoft ACPI-Compliant System
 (ISA) 0x00000194 (404)	Microsoft ACPI-Compliant System
 (ISA) 0x00000195 (405)	Microsoft ACPI-Compliant System
 (ISA) 0x00000196 (406)	Microsoft ACPI-Compliant System
 (ISA) 0x00000197 (407)	Microsoft ACPI-Compliant System
 (ISA) 0x00000198 (408)	Microsoft ACPI-Compliant System
 (ISA) 0x00000199 (409)	Microsoft ACPI-Compliant System
 (ISA) 0x0000019A (410)	Microsoft ACPI-Compliant System
 (ISA) 0x0000019B (411)	Microsoft ACPI-Compliant System
 (ISA) 0x0000019C (412)	Microsoft ACPI-Compliant System
 (ISA) 0x0000019D (413)	Microsoft ACPI-Compliant System
 (ISA) 0x0000019E (414)	Microsoft ACPI-Compliant System
 (ISA) 0x0000019F (415)	Microsoft ACPI-Compliant System
 (ISA) 0x000001A0 (416)	Microsoft ACPI-Compliant System
 (ISA) 0x000001A1 (417)	Microsoft ACPI-Compliant System
 (ISA) 0x000001A2 (418)	Microsoft ACPI-Compliant System
 (ISA) 0x000001A3 (419)	Microsoft ACPI-Compliant System
 (ISA) 0x000001A4 (420)	Microsoft ACPI-Compliant System
 (ISA) 0x000001A5 (421)	Microsoft ACPI-Compliant System
 (ISA) 0x000001A6 (422)	Microsoft ACPI-Compliant System
 (ISA) 0x000001A7 (423)	Microsoft ACPI-Compliant System

 (ISA) 0x000001A8 (424)	Microsoft ACPI-Compliant System
 (ISA) 0x000001A9 (425)	Microsoft ACPI-Compliant System
 (ISA) 0x000001AA (426)	Microsoft ACPI-Compliant System
 (ISA) 0x000001AB (427)	Microsoft ACPI-Compliant System
 (ISA) 0x000001AC (428)	Microsoft ACPI-Compliant System
 (ISA) 0x000001AD (429)	Microsoft ACPI-Compliant System
 (ISA) 0x000001AE (430)	Microsoft ACPI-Compliant System
 (ISA) 0x000001AF (431)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B0 (432)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B1 (433)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B2 (434)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B3 (435)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B4 (436)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B5 (437)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B6 (438)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B7 (439)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B8 (440)	Microsoft ACPI-Compliant System
 (ISA) 0x000001B9 (441)	Microsoft ACPI-Compliant System
 (ISA) 0x000001BA (442)	Microsoft ACPI-Compliant System
 (ISA) 0x000001BB (443)	Microsoft ACPI-Compliant System
 (ISA) 0x000001BC (444)	Microsoft ACPI-Compliant System
 (ISA) 0x000001BD (445)	Microsoft ACPI-Compliant System
 (ISA) 0x000001BE (446)	Microsoft ACPI-Compliant System
 (ISA) 0x000001BF (447)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C0 (448)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C1 (449)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C2 (450)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C3 (451)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C4 (452)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C5 (453)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C6 (454)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C7 (455)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C8 (456)	Microsoft ACPI-Compliant System
 (ISA) 0x000001C9 (457)	Microsoft ACPI-Compliant System

 (ISA) 0x000001CA (458)	Microsoft ACPI-Compliant System
 (ISA) 0x000001CB (459)	Microsoft ACPI-Compliant System
 (ISA) 0x000001CC (460)	Microsoft ACPI-Compliant System
 (ISA) 0x000001CD (461)	Microsoft ACPI-Compliant System
 (ISA) 0x000001CE (462)	Microsoft ACPI-Compliant System
 (ISA) 0x000001CF (463)	Microsoft ACPI-Compliant System
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 (ISA) 0x000001D3 (467)	Microsoft ACPI-Compliant System
 (ISA) 0x000001D4 (468)	Microsoft ACPI-Compliant System
 (ISA) 0x000001D5 (469)	Microsoft ACPI-Compliant System
 (ISA) 0x000001D6 (470)	Microsoft ACPI-Compliant System
 (ISA) 0x000001D7 (471)	Microsoft ACPI-Compliant System
 (ISA) 0x000001D8 (472)	Microsoft ACPI-Compliant System
 (ISA) 0x000001D9 (473)	Microsoft ACPI-Compliant System
 (ISA) 0x000001DA (474)	Microsoft ACPI-Compliant System
 (ISA) 0x000001DB (475)	Microsoft ACPI-Compliant System
 (ISA) 0x000001DC (476)	Microsoft ACPI-Compliant System
 (ISA) 0x000001DD (477)	Microsoft ACPI-Compliant System
 (ISA) 0x000001DE (478)	Microsoft ACPI-Compliant System
 (ISA) 0x000001DF (479)	Microsoft ACPI-Compliant System
 (ISA) 0x000001E0 (480)	Microsoft ACPI-Compliant System
 (ISA) 0x000001E1 (481)	Microsoft ACPI-Compliant System
 (ISA) 0x000001E2 (482)	Microsoft ACPI-Compliant System
 (ISA) 0x000001E3 (483)	Microsoft ACPI-Compliant System
 (ISA) 0x000001E4 (484)	Microsoft ACPI-Compliant System
 (ISA) 0x000001E5 (485)	Microsoft ACPI-Compliant System
 (ISA) 0x000001E6 (486)	Microsoft ACPI-Compliant System
 (ISA) 0x000001E7 (487)	Microsoft ACPI-Compliant System
 (ISA) 0x000001E8 (488)	Microsoft ACPI-Compliant System
 (ISA) 0x000001E9 (489)	Microsoft ACPI-Compliant System
 (ISA) 0x000001EA (490)	Microsoft ACPI-Compliant System
 (ISA) 0x000001EB (491)	Microsoft ACPI-Compliant System



	(ISA) 0x000001E7 (487)	Microsoft ACPI-Compliant System
	(ISA) 0x000001E8 (488)	Microsoft ACPI-Compliant System
	(ISA) 0x000001E9 (489)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EA (490)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EB (491)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EC (492)	Microsoft ACPI-Compliant System
	(ISA) 0x000001ED (493)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EE (494)	Microsoft ACPI-Compliant System
	(ISA) 0x000001EF (495)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F0 (496)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F1 (497)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F2 (498)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F3 (499)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F4 (500)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F5 (501)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F6 (502)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F7 (503)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F8 (504)	Microsoft ACPI-Compliant System
	(ISA) 0x000001F9 (505)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FA (506)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FB (507)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FC (508)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FD (509)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FE (510)	Microsoft ACPI-Compliant System
	(ISA) 0x000001FF (511)	Microsoft ACPI-Compliant System
	(ISA) 0x00000400 (1024)	Intel SST Audio Device (WDM)
	(ISA) 0x00000402 (1026)	Intel(R) Power Management IC Device
	(PCI) 0x00000010 (16)	Realtek PCIe GBE Family Controller
	(PCI) 0x00000017 (23)	USB Synopsys Controller
	(PCI) 0xFFFFFFFFB (-5)	Intel(R) HD Graphics
	(PCI) 0xFFFFFFFFC (-4)	Intel(R) Trusted Execution Engine Interface
	(PCI) 0xFFFFFFFFD (-3)	Intel(R) USB 3.0 eXtensible Host Controller - 1.0 (Microsoft)
	(PCI) 0xFFFFFFFFE (-2)	PCI Express Root Port