

# COM-SKUC6

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COM Express Module

User's Manual 1<sup>st</sup> Ed

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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
● COM-SKUC6	1
● M2.5 screws	4
● Product DVD with User's Manual (in pdf) and drivers	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. Make sure the power source matches the power rating of the device.
3. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
4. Always completely disconnect the power before working on the system's hardware.
5. No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
6. 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.
7. Always disconnect this device from any AC supply before cleaning.
8. While cleaning, use a damp cloth instead of liquid or spray detergents.
9. Make sure the device is installed near a power outlet and is easily accessible.
10. Keep this device away from humidity.
11. Place the device on a solid surface during installation to prevent falls
12. Do not cover the openings on the device to ensure optimal heat dissipation.
13. Watch out for high temperatures when the system is running.
14. Do not touch the heat sink or heat spreader when the system is running
15. Never pour any liquid into the openings. This could cause fire or electric shock.
16. 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.

17. 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
18. **DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.**

### **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 Main Board/ Daughter Board/ Backplane

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	○	○	○	○	○	○
<p>○: 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。</p> <p>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。</p> <p>备注: 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。</p>						

## China RoHS Requirement (EN)

Poisonous or Hazardous Substances or Elements in Products

AAEON Main Board/ Daughter Board/ Backplane

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	○	○	○	○	○	○
<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><b>Note:</b> The Environment Friendly Use Period as labeled on this product is applicable under normal usage only</p>						

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# Chapter 1

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Product Specifications

## 1.1 Specifications

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### System

● Form Factor	95 x 95 mm
● CPU	Onboard 6th Generation Intel® Core™ i3/i5/i7 processor, BGA Type
● CPU Frequency	Up to i7-6600U 3.4 GHz
● Chipset	Processor integrated
● Memory Type	DDR3L non-ECC SODIMM x 1 up to 8 GB
● Max Memory Capacity	8 GB
● BIOS	AMI BIOS, Legacy free BIOS
● Wake On LAN	Yes
● Watchdog Timer	ITE IT8528
● Power Requirement	Normal: +12V
● Power Supply Type	AT/ATX selection
● Power Consumption (Typical)	Intel® Core™ i7-6600U 2.6 GHz, DDR3L, 8 GB 1A@12V
● Dimensions (L x W)	95 x 95 mm (4.75 x 4.75")
● Operating Temperature	0 ~ 60°C (32 ~ 140°F)
● Storage Temperature	-20 ~ 70°C (-4 ~ 158°F)
● Operation Humidity	10 ~ 90% relative humidity, non-condensing
● MTBF	80,000

- **Certification** CE/FCC Class A

## Display

- **VGA/LCD Controller** Intel® HD Graphics 520
- **Video Output** VGA  
LVDS/eDP  
DDI x 2 (one shared with VGA)

## I/O

- **Ethernet** Intel I219, Gigabit Ethernet
- **Audio** HD audio
- **USB** USB 3.0 x 4  
USB 2.0 x 8
- **Serial Port** 2-wire UART (Tx/Rx) x 2
- **HDD Interface** SATA 6.0 Gb/s x 3, port 3 optional for i5/i7 SKU
- **Onboard SSD** -
- **Expansion Slot** PCIe[x1] x 8 (maximum, see appendix D)  
LPC x 1  
SMBus x 1
- **DI/O** GPIO 8-bit
- **TPM** Optional

# Chapter 2

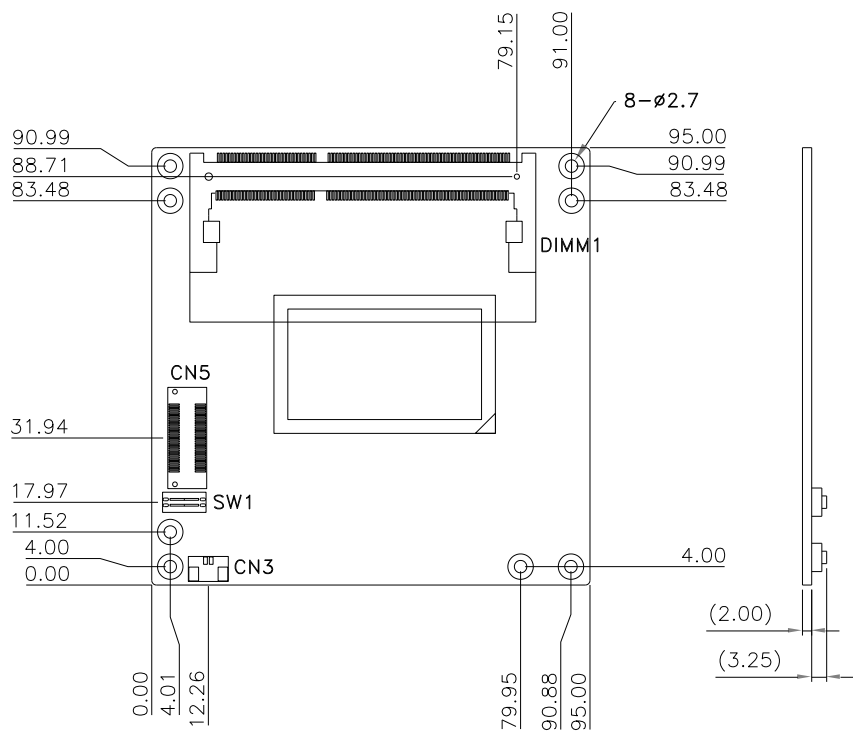
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Hardware Information

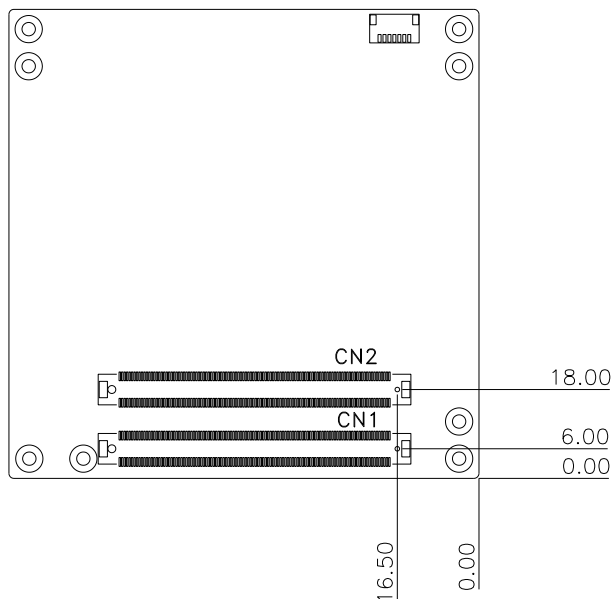


## 2.1 Dimensions, Jumpers and Connectors

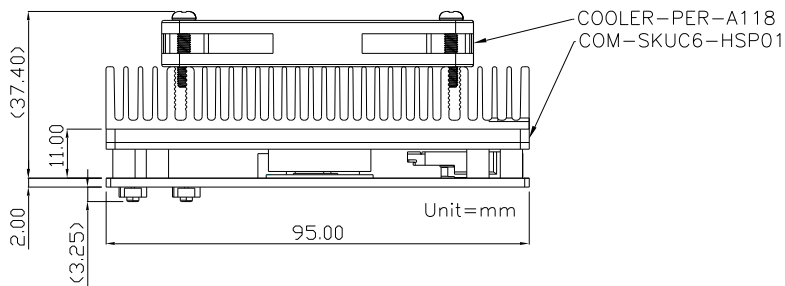
### Component Side



## Solder Side



## With Heat spreader



## 2.2 List of Jumpers

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

Label	Function
CN1	ROW A/B
CN2	ROW C/D
CN3	RTC Connector
CN4	SPI ROM FLASH
DIMM1	DDR3L Socket
SW1	AT/ATX switch & DDI/VGA switch

### 2.2.1 ROW A/B Connector (CN1)

Row A		Row B	
Pin	Signal	Pin	Signal
A1	GND (FIXED)	B1	GND (FIXED)
A2	GBE0_MDI3-	B2	GBE0_ACT#
A3	GBE0_MDI3+	B3	LPC_FRAME#
A4	GBE0_LINK100#	B4	LPC_AD0
A5	GBE0_LINK1000#	B5	LPC_AD1
A6	GBE0_MDI2-	B6	LPC_AD2
A7	GBE0_MDI2+	B7	LPC_AD3
A8	GBE0_LINK	B8	N.C
A9	GBE0_MDI1-	B9	N.C
A10	GBE0_MDI1+	B10	LPC_CLK
A11	GND (FIXED)	B11	GND (FIXED)
A12	GBE0_MDI0-	B12	PWRBTN#

<b>A13</b>	GBE0_MDIO+	<b>B13</b>	SMB_CK
<b>A14</b>	GBE0_CTREF	<b>B14</b>	SMB_DAT
<b>A15</b>	SUS_S3#	<b>B15</b>	SMB_ALERT#
<b>A16</b>	SATA0_TX+	<b>B16</b>	SATA1_TX+
<b>A17</b>	SATA0_TX-	<b>B17</b>	SATA1_TX-
<b>A18</b>	SUS_S4#	<b>B18</b>	SUS_STAT#
<b>A19</b>	SATA0_RX+	<b>B19</b>	SATA1_RX+
<b>A20</b>	SATA0_RX-	<b>B20</b>	SATA1_RX-
<b>A21</b>	GND (FIXED)	<b>B21</b>	GND (FIXED)
<b>A22</b>	SATA2_TX+ (note)	<b>B22</b>	N.C
<b>A23</b>	SATA2_TX- (note)	<b>B23</b>	N.C
<b>A24</b>	SUS_S5#	<b>B24</b>	PWR_OK
<b>A25</b>	SATA2_RX+ (note)	<b>B25</b>	N.C
<b>A26</b>	SATA2_RX- (note)	<b>B26</b>	N.C
<b>A27</b>	BATLOW#	<b>B27</b>	WDT
<b>A28</b>	ATA_ACT#	<b>B28</b>	N.C
<b>A29</b>	AC_SYNC	<b>B29</b>	AC_SDIN1
<b>A30</b>	AC_RST#	<b>B30</b>	AC_SDINO
<b>A31</b>	GND (FIXED)	<b>B31</b>	GND (FIXED)
<b>A32</b>	AC_BITCLK	<b>B32</b>	SPKR
<b>A33</b>	AC_SDOOUT	<b>B33</b>	I2C_CK
<b>A34</b>	BIOS_DIS0#	<b>B34</b>	I2C_DAT
<b>A35</b>	THRMTRIP#	<b>B35</b>	N.C
<b>A36</b>	USB6-	<b>B36</b>	USB7-
<b>A37</b>	USB6+	<b>B37</b>	USB7+
<b>A38</b>	USB_6_7_OC#	<b>B38</b>	USB_4_5_OC#
<b>A39</b>	USB4-	<b>B39</b>	USB5-
<b>A40</b>	USB4+	<b>B40</b>	USB5+
<b>A41</b>	GND (FIXED)	<b>B41</b>	GND (FIXED)

<b>A42</b>	USB2-	<b>B42</b>	USB3-
<b>A43</b>	USB2+	<b>B43</b>	USB3+
<b>A44</b>	USB_2_3_OC#	<b>B44</b>	USB_0_1_OC#
<b>A45</b>	USB0-	<b>B45</b>	USB1-
<b>A46</b>	USB0+	<b>B46</b>	USB1+
<b>A47</b>	VCC_RTC	<b>B47</b>	EXCD1_PERST#
<b>A48</b>	EXCD0_PERST#	<b>B48</b>	EXCD1_CPPE#
<b>A49</b>	EXCD0_CPPE#	<b>B49</b>	SYS_RESET#
<b>A50</b>	LPC_SERIRQ	<b>B50</b>	CB_RESET#
<b>A51</b>	GND (FIXED)	<b>B51</b>	GND (FIXED)
<b>A52</b>	PCIE_TX5+(note)	<b>B52</b>	PCIE_RX5+(note)
<b>A53</b>	PCIE_TX5-(note)	<b>B53</b>	PCIE_RX5-(note)
<b>A54</b>	GPIO	<b>B54</b>	GPO1
<b>A55</b>	PCIE_TX4+(note)	<b>B55</b>	PCIE_RX4+(note)
<b>A56</b>	PCIE_TX4-(note)	<b>B56</b>	PCIE_RX4-(note)
<b>A57</b>	GND	<b>B57</b>	GPO2
<b>A58</b>	PCIE_TX3+(note)	<b>B58</b>	PCIE_RX3+(note)
<b>A59</b>	PCIE_TX3-(note)	<b>B59</b>	PCIE_RX3-(note)
<b>A60</b>	GND (FIXED)	<b>B60</b>	GND (FIXED)
<b>A61</b>	PCIE_TX2+	<b>B61</b>	PCIE_RX2+
<b>A62</b>	PCIE_TX2-	<b>B62</b>	PCIE_RX2-
<b>A63</b>	GPI1	<b>B63</b>	GPO3
<b>A64</b>	PCIE_TX1+	<b>B64</b>	PCIE_RX1+
<b>A65</b>	PCIE_TX1-	<b>B65</b>	PCIE_RX1-
<b>A66</b>	GND	<b>B66</b>	WAKE0#
<b>A67</b>	GPI2	<b>B67</b>	WAKE1#
<b>A68</b>	PCIE_TX0+	<b>B68</b>	PCIE_RX0+
<b>A69</b>	PCIE_TX0-	<b>B69</b>	PCIE_RX0-
<b>A70</b>	GND (FIXED)	<b>B70</b>	GND (FIXED)

<b>A71</b>	LVDS_A0+	<b>B71</b>	LVDS_B0+
<b>A72</b>	LVDS_A0-	<b>B72</b>	LVDS_B0-
<b>A73</b>	LVDS_A1+	<b>B73</b>	LVDS_B1+
<b>A74</b>	LVDS_A1-	<b>B74</b>	LVDS_B1-
<b>A75</b>	LVDS_A2+	<b>B75</b>	LVDS_B2+
<b>A76</b>	LVDS_A2-	<b>B76</b>	LVDS_B2-
<b>A77</b>	LVDS_VDD_EN	<b>B77</b>	LVDS_B3+
<b>A78</b>	LVDS_A3+	<b>B78</b>	LVDS_B3-
<b>A79</b>	LVDS_A3-	<b>B79</b>	LVDS_BKLT_EN
<b>A80</b>	GND (FIXED)	<b>B80</b>	GND (FIXED)
<b>A81</b>	LVDS_A_CK+	<b>B81</b>	LVDS_B_CK+
<b>A82</b>	LVDS_A_CK-	<b>B82</b>	LVDS_B_CK-
<b>A83</b>	LVDS_I2C_CK	<b>B83</b>	LVDS_BKLT_CTRL
<b>A84</b>	LVDS_I2C_DAT	<b>B84</b>	VCC_5V_SBY
<b>A85</b>	GPI3	<b>B85</b>	VCC_5V_SBY
<b>A86</b>	KBRST#(option)	<b>B86</b>	VCC_5V_SBY
<b>A87</b>	H_A20GATE(option)	<b>B87</b>	VCC_5V_SBY
<b>A88</b>	PCIE0_CK_REF+	<b>B88</b>	BISO_DIS1#
<b>A89</b>	PCIE0_CK_REF-	<b>B89</b>	VGA_RED
<b>A90</b>	GND (FIXED)	<b>B90</b>	GND (FIXED)
<b>A91</b>	+V3.3S(option)	<b>B91</b>	VGA_GRN
<b>A92</b>	SPI_MISO	<b>B92</b>	VGA_BLU
<b>A93</b>	GPO0	<b>B93</b>	VGA_HSYNC
<b>A94</b>	SPI_CLK	<b>B94</b>	VGA_VSYNC
<b>A95</b>	SPI_MOSI	<b>B95</b>	VGA_I2C_CK
<b>A96</b>	GND	<b>B96</b>	VGA_I2C_DAT
<b>A97</b>	N.C	<b>B97</b>	SPI_CS#
<b>A98</b>	CB_STXD1X	<b>B98</b>	SMI#
<b>A99</b>	CB_SRXD1X	<b>B99</b>	SCI#

<b>A100</b>	GND (FIXED)	<b>B100</b>	GND (FIXED)
<b>A101</b>	CB_STXD2X	<b>B101</b>	CB_FAN_PWM
<b>A102</b>	CB_SRXD2X	<b>B102</b>	CB_FAN_TACH
<b>A103</b>	PCH_LID#	<b>B103</b>	PCH_SLEEP#
<b>A104</b>	VCC_12V	<b>B104</b>	VCC_12V
<b>A105</b>	VCC_12V	<b>B105</b>	VCC_12V
<b>A106</b>	VCC_12V	<b>B106</b>	VCC_12V
<b>A107</b>	VCC_12V	<b>B107</b>	VCC_12V
<b>A108</b>	VCC_12V	<b>B108</b>	VCC_12V
<b>A109</b>	VCC_12V	<b>B109</b>	VCC_12V
<b>A110</b>	GND (FIXED)	<b>B110</b>	GND (FIXED)

## 2.2.2 ROW C/D Connector (CN2)

Row C		Row D	
Pin	Signal	Pin	Signal
<b>C1</b>	GND (FIXED)	<b>D1</b>	GND (FIXED)
<b>C2</b>	GND (FIXED)	<b>D2</b>	GND (FIXED)
<b>C3</b>	USB_SSRX0-	<b>D3</b>	USB_SSTX0-
<b>C4</b>	USB_SSRX0+	<b>D4</b>	USB_SSTX0+
<b>C5</b>	GND (FIXED)	<b>D5</b>	GND (FIXED)
<b>C6</b>	USB_SSRX1-	<b>D6</b>	USB_SSTX1-
<b>C7</b>	USB_SSRX1+	<b>D7</b>	USB_SSTX1+
<b>C8</b>	GND (FIXED)	<b>D8</b>	GND (FIXED)
<b>C9</b>	USB_SSRX2-	<b>D9</b>	USB_SSTX2-
<b>C10</b>	USB_SSRX2+	<b>D10</b>	USB_SSTX2+
<b>C11</b>	GND (FIXED)	<b>D11</b>	GND (FIXED)
<b>C12</b>	USB_SSRX3-	<b>D12</b>	USB_SSTX3-

<b>C13</b>	USB_SSRX3+	<b>D13</b>	USB_SSTX3+
<b>C14</b>	GND (FIXED)	<b>D14</b>	GND (FIXED)
<b>C15</b>	N.C	<b>D15</b>	DDI1_CTRLCLK_AUX+
<b>C16</b>	N.C	<b>D16</b>	DDI1_CTRLDATA_AUX-
<b>C17</b>	RSVD	<b>D17</b>	RSVD
<b>C18</b>	RSVD	<b>D18</b>	RSVD
<b>C19</b>	PCIE_RX6+(note)	<b>D19</b>	PCIE_TX6+(note)
<b>C20</b>	PCIE_RX6-(note)	<b>D20</b>	PCIE_TX6-(note)
<b>C21</b>	GND (FIXED)	<b>D21</b>	GND (FIXED)
<b>C22</b>	PCIE_RX7+(note)	<b>D22</b>	PCIE_TX7+(note)
<b>C23</b>	PCIE_RX7-(note)	<b>D23</b>	PCIE_TX7-(note)
<b>C24</b>	DDI1_HPD	<b>D24</b>	RSVD
<b>C25</b>	N.C	<b>D25</b>	RSVD
<b>C26</b>	N.C	<b>D26</b>	DDI1_PAIR0+
<b>C27</b>	RSVD	<b>D27</b>	DDI1_PAIR0-
<b>C28</b>	RSVD	<b>D28</b>	RSVD
<b>C29</b>	N.C	<b>D29</b>	DDI1_PAIR1+
<b>C30</b>	N.C	<b>D30</b>	DDI1_PAIR1-
<b>C31</b>	GND (FIXED)	<b>D31</b>	GND (FIXED)
<b>C32</b>	DDI2_CTRLCLK_AUX+	<b>D32</b>	DDI1_PAIR2+
<b>C33</b>	DDI2_CTRLDATA_AUX-	<b>D33</b>	DDI1_PAIR2-
<b>C34</b>	DDI2_DDC_AUX_SEL	<b>D34</b>	DDI1_DDC_AUX_SEL
<b>C35</b>	RSVD	<b>D35</b>	RSVD
<b>C36</b>	N.C	<b>D36</b>	DDI1_PAIR3+
<b>C37</b>	N.C	<b>D37</b>	DDI1_PAIR3-
<b>C38</b>	N.C	<b>D38</b>	RSVD
<b>C39</b>	N.C	<b>D39</b>	DDI2_PAIR0+
<b>C40</b>	N.C	<b>D40</b>	DDI2_PAIR0-
<b>C41</b>	GND (FIXED)	<b>D41</b>	GND (FIXED)



C42	N.C	D42	DDI2_PAIR1+
C43	N.C	D43	DDI2_PAIR1-
C44	N.C	D44	DDI1_HPD
C45	RSVD	D45	RSVD
C46	N.C	D46	DDI2_PAIR2+
C47	N.C	D47	DDI2_PAIR2-
C48	RSVD	D48	RSVD
C49	N.C	D49	DDI2_PAIR3+
C50	N.C	D50	DDI2_PAIR3-
C51	GND (FIXED)	D51	GND (FIXED)
C52	N.C	D52	N.C
C53	N.C	D53	N.C
C54	N.C	D54	N.C
C55	N.C	D55	N.C
C56	N.C	D56	N.C
C57	N.C	D57	GND
C58	N.C	D58	N.C
C59	N.C	D59	N.C
C60	GND (FIXED)	D60	GND (FIXED)
C61	N.C	D61	N.C
C62	N.C	D62	N.C
C63	RSVD	D63	RSVD
C64	RSVD	D64	RSVD
C65	N.C	D65	N.C
C66	N.C	D66	N.C
C67	RSVD	D67	GND (FIXED)
C68	N.C	D68	N.C
C69	N.C	D69	N.C
C70	GND (FIXED)	D70	GND (FIXED)

C71	N.C	D71	N.C
C72	N.C	D72	N.C
C73	GND (FIXED)	D73	GND (FIXED)
C74	N.C	D74	N.C
C75	N.C	D75	N.C
C76	GND (FIXED)	D76	GND (FIXED)
C77	RSVD	D77	RSVD
C78	N.C	D78	N.C
C79	N.C	D79	N.C
C80	GND (FIXED)	D80	GND (FIXED)
C81	N.C	D81	N.C
C82	N.C	D82	N.C
C83	RSVD	D83	RSVD
C84	GND (FIXED)	D84	GND (FIXED)
C85	N.C	D85	N.C
C86	N.C	D86	N.C
C87	GND (FIXED)	D87	GND (FIXED)
C88	N.C	D88	N.C
C89	N.C	D89	N.C
C90	GND (FIXED)	D90	GND (FIXED)
C91	N.C	D91	N.C
C92	N.C	D92	N.C
C93	GND	D93	GND
C94	N.C	D94	N.C
C95	N.C	D95	N.C
C96	GND (FIXED)	D96	GND (FIXED)
C97	RSVD	D97	RSVD
C98	N.C	D98	N.C
C99	N.C	D99	N.C

C100	GND (FIXED)	D100	GND (FIXED)
C101	N.C	D101	N.C
C102	N.C	D102	N.C
C103	GND (FIXED)	D103	GND
C104	VCC_12V	D104	VCC_12V
C105	VCC_12V	D105	VCC_12V
C106	VCC_12V	D106	VCC_12V
C107	VCC_12V	D107	VCC_12V
C108	VCC_12V	D108	VCC_12V
C109	VCC_12V	D109	VCC_12V
C110	GND (FIXED)	D110	GND (FIXED)

### 2.2.3 RTC Connector (CN3)

Pin	Signal
1	Battery power
2	GND

### 2.2.4 SPI ROM FLASH (CN4)

Pin	Signal
1	SPI_SO_F
2	GND
3	SPI_CLK_F
4	3.3V
5	SPI_SI_F
6	SPI_CE0#_F
7	SPI_CE1#_F

## 2.2.5 AT/ATX Switch (SW1)

---

	ON	OFF
1	AT Mode	ATX Mode
2	VGA	DDI

# Chapter 3

---

AMI BIOS Setup

## 3.1 System Test and Initialization

---

The board 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 <ESC> 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

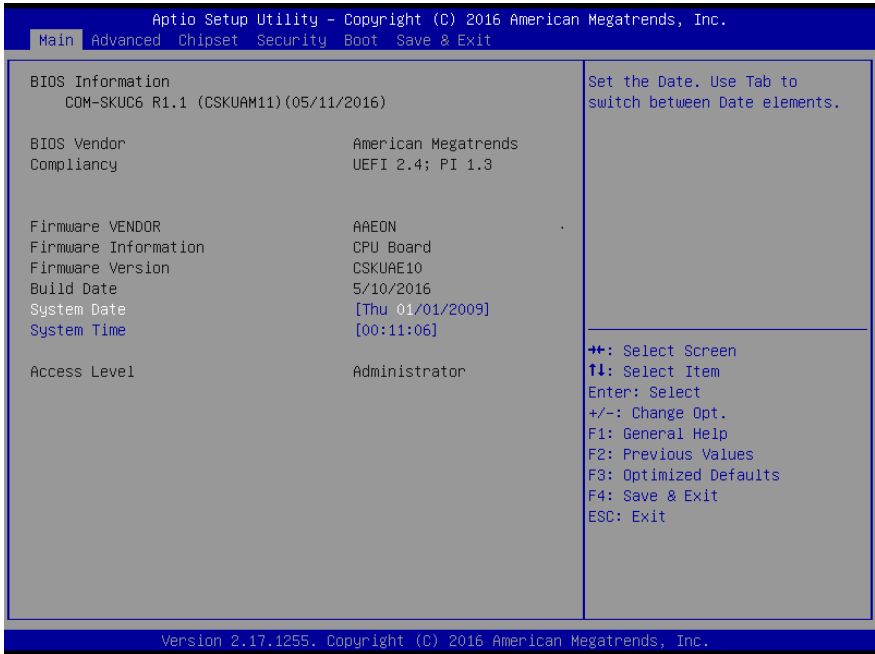
**Boot** – Enable/ Disable quiet Boot Option

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

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

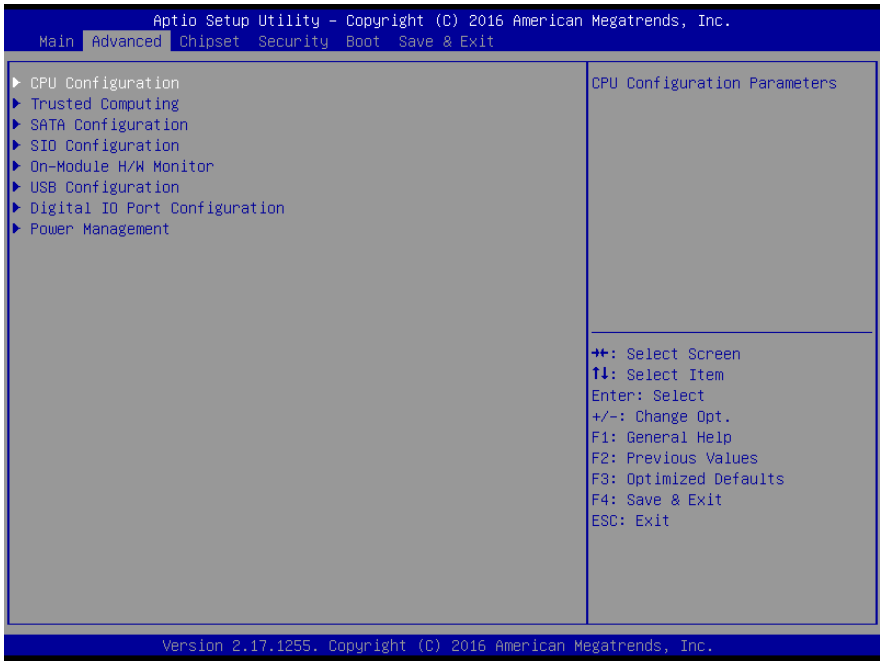
### 3.3 Setup submenu: Main

Press **Delete** to enter Setup





### 3.4 Setup submenu: Advanced



### 3.4.1 Advanced: CPU Configuration

Aptio Setup Utility - Copyright (C) 2016 American Megatrends, Inc.

Advanced

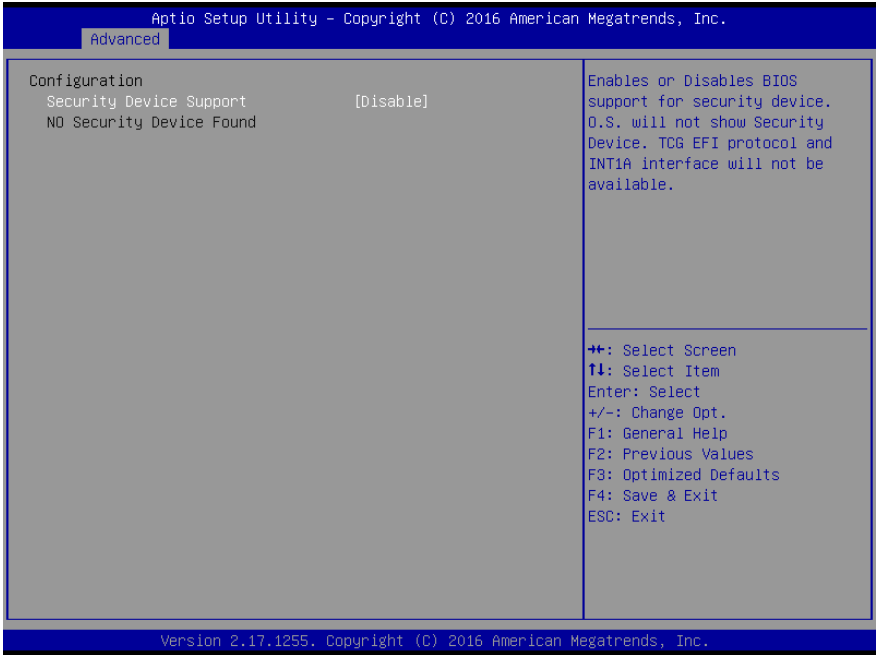
CPU Configuration		Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled only one thread per enabled core is enabled.
Intel(R) Core(TM) i7-6600U CPU @ 2.60GHz		
CPU Signature	406E3	
Microcode Patch	84	
Max CPU Speed	2600 MHz	
Min CPU Speed	400 MHz	
CPU Speed	2600 MHz	
Processor Cores	2	
Hyper Threading Technology	Supported	
Intel VT-x Technology	Supported	
Intel SMX Technology	Supported	
64-bit	Supported	
EIST Technology	Supported	
CPU C3 state	Supported	
CPU D6 state	Supported	
CPU C7 state	Supported	
L1 Data Cache	32 kB x 2	
L1 Code Cache	32 kB x 2	
L2 Cache	256 kB x 2	
L3 Cache	4 MB	
L4 Cache	Not Present	
Hyper-threading	[Enabled]	
Intel Virtualization Technology	[Enabled]	
Intel(R) SpeedStep(tm)	[Disabled]	
CPU C states	[Disabled]	

Version 2.17.1255. Copyright (C) 2016 American Megatrends, Inc.

Options summary:

Intel Virtualization Technology	Disabled	
	Enabled	Optimal Default, Failsafe Default
When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.		
Intel® SpeedStep™	Disabled	Optimal Default, Failsafe Default
	Enabled	
Allows more than two frequency ranges to be supported.		
CPU C states	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enabled for Windows XP and Linux (OS optimized for Hyper-Threading Technology) and Disable for other OS (OS not optimized for Hyper-Threading Technology). When Disabled only one thread per enabled core is enabled.		

### 3.4.2 Advanced: Trusted Computing

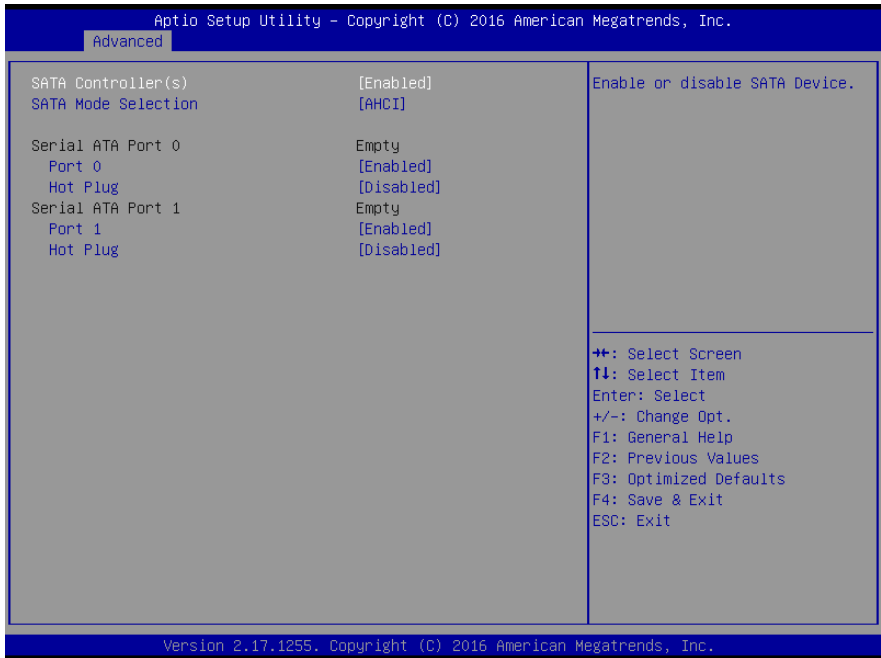


Options summary:

Security Device Support	Disable	
	Enable	Optimal Default, Failsafe Default
Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.		
TPM State	Disable	
	Enable	Optimal Default, Failsafe Default
Enables/Disables Security Device. NOTE: Your Computer will reboot during restart in order to change State of the Device.		
Pending operation	None	Optimal Default, Failsafe Default
	TPM Clear	
Schedule an Operation for the Security Device. NOTE: Your Computer will reboot during restart in order to change state of Security Device.		
Device Select	TPM 1.2	
	TPM 2.0	
	Auto	Optimal Default, Failsafe Default

TPM 1.2 will restrict support to TPM 1.2 device, 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 device will be enumerated.

### 3.4.3 Advanced: SATA Configuration

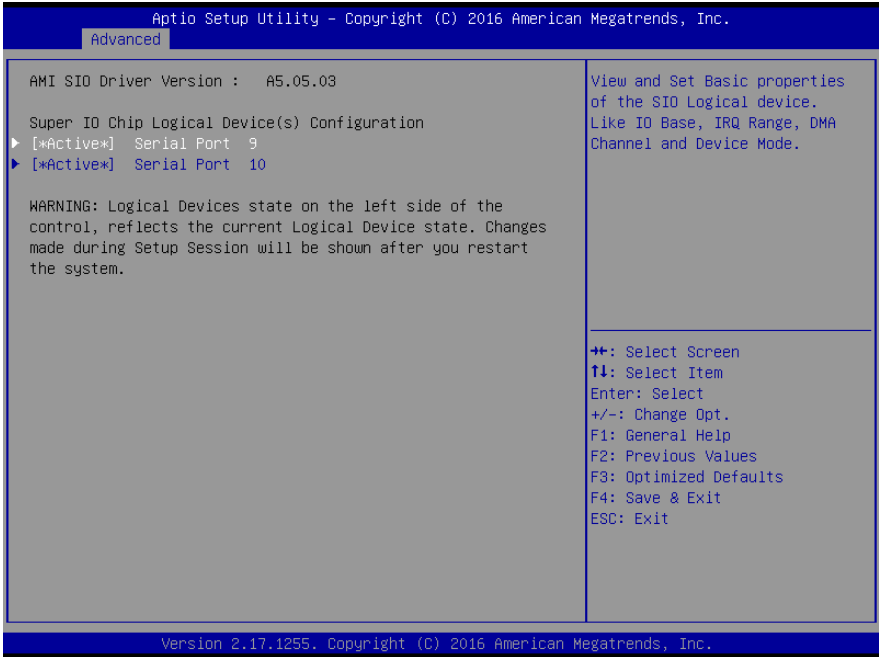


Options summary:

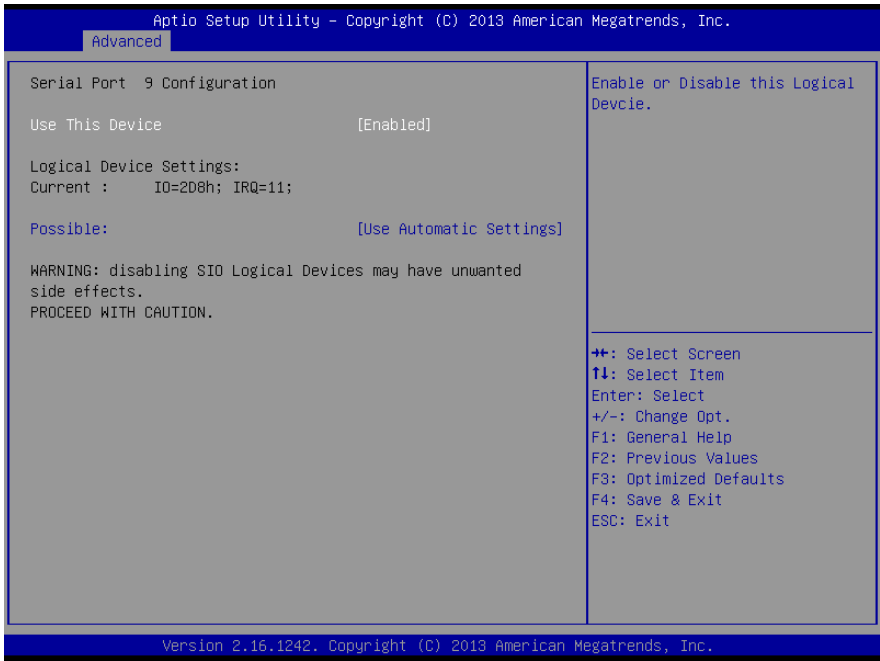
SATA Controller(s)	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or disable SATA Device.		
SATA Mode	AHCI Mode	Optimal Default, Failsafe Default
	RAID Mode	
Determines how SATA controller(s) operate.		
Port 0	Disabled	
	Enabled	Optimal Default, Failsafe Default
Enable or Disable SATA Port.		
Hot Plug	Disabled	Optimal Default, Failsafe Default
	Enabled	

Designates this port as Hot Pluggable.

### 3.4.4 Advanced: SIO Configuration



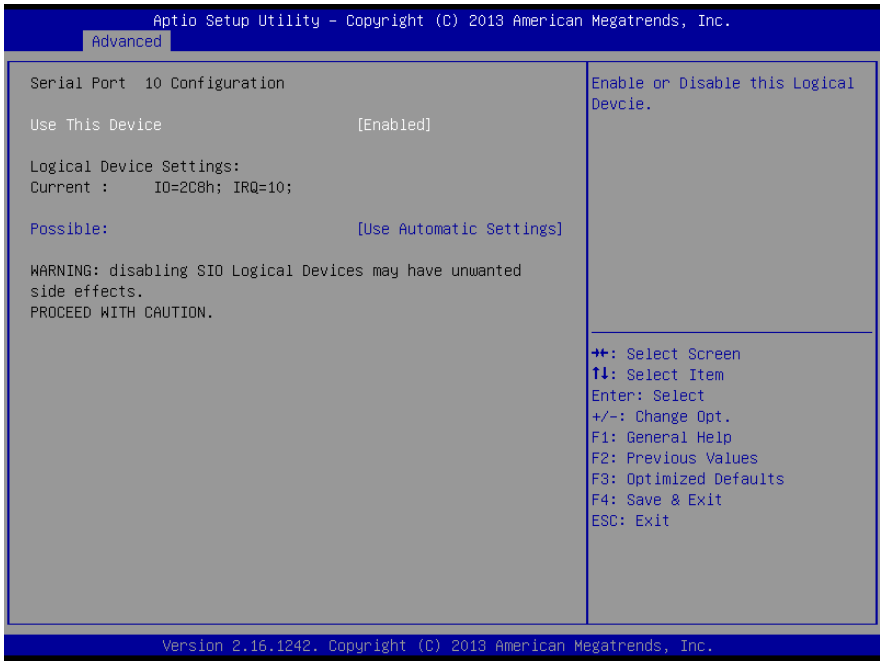
### 3.4.4.1 SIO Configuration: Serial Port 9 Configuration



Options summary:

Use This Device	Disabled	Optimal Default, Failsafe Default
	Enabled	
En/Disable Serial Port (COM)		
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=2D8; IRQ=11;	
	IO=2C8; IRQ=11;	
Select an optimal setting for IO device		

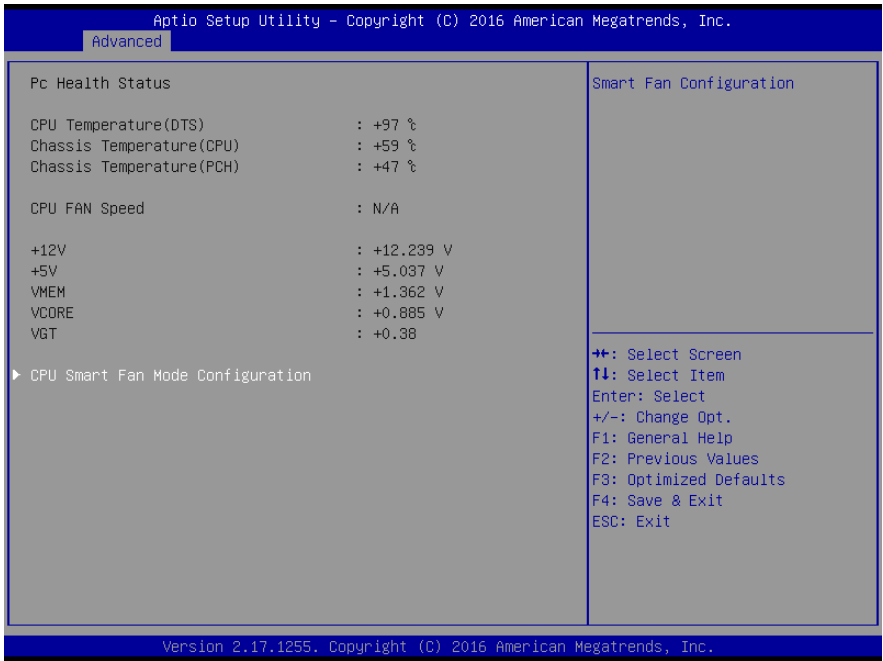
### 3.4.4.2 SIO Configuration: Serial Port 10 Configuration



Options summary:

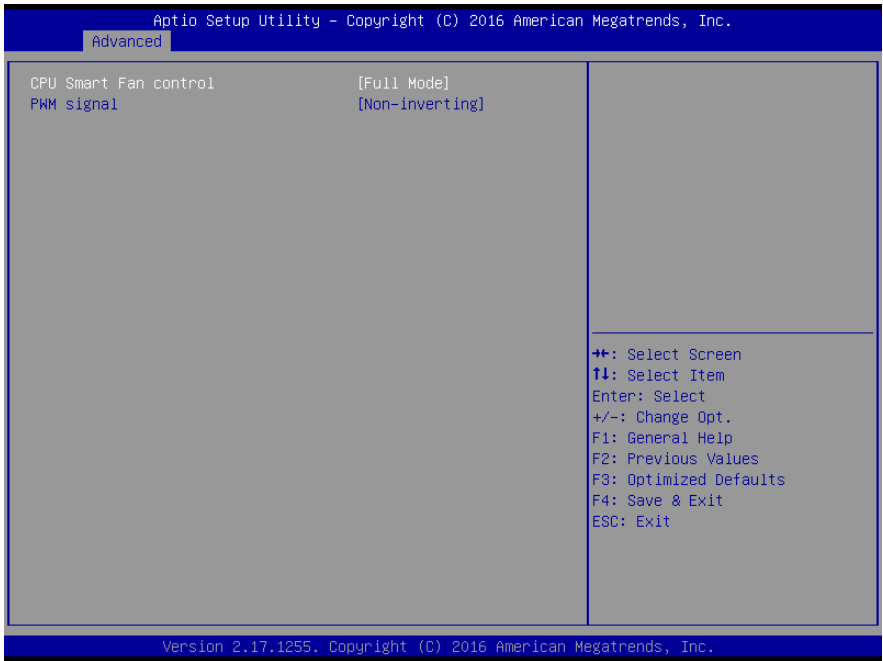
Use This Device	Disabled	Optimal Default, Failsafe Default
	Enabled	
En/Disable Serial Port (COM)		
Possible:	Use Automatic Settings	Optimal Default, Failsafe Default
	IO=2D8; IRQ=11;	
	IO=2C8; IRQ=11;	
Select an optimal setting for IO device		

### 3.4.5 Advanced: Hardware Monitor





### 3.4.5.1 Hardware Monitor: CPU Smart Fan Mode Configuration



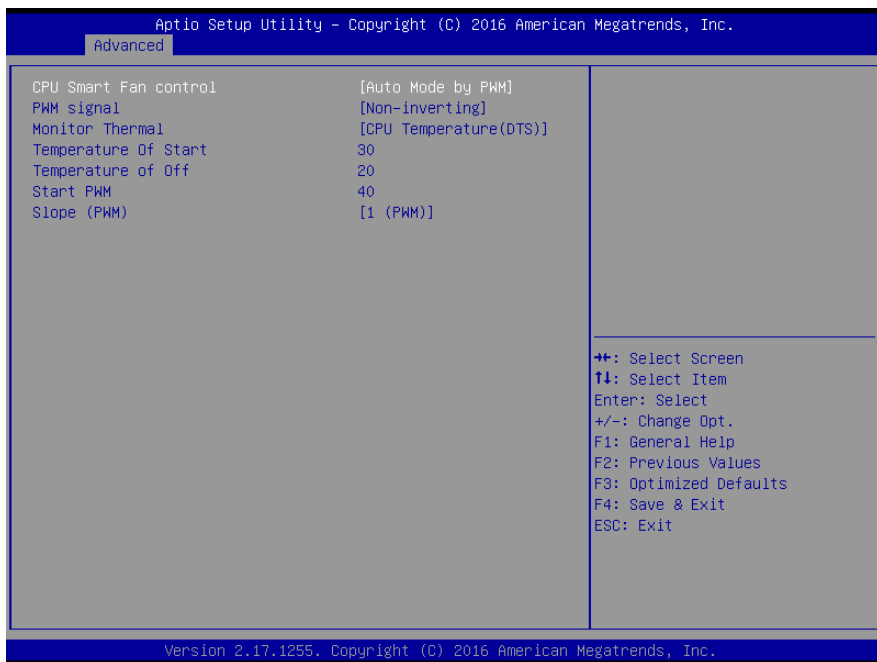
Options summary:

CPU Smart Fan control	Full Mode	Optimal Default, Failsafe Default
	Manual Mode by PWM	
	Auto Mode by PWM	
PWM signal	Non-inverting	Optimal Default, Failsafe Default
	Inverting	
Select output PWM of inverting or non-uninverting signal		



Options summary:

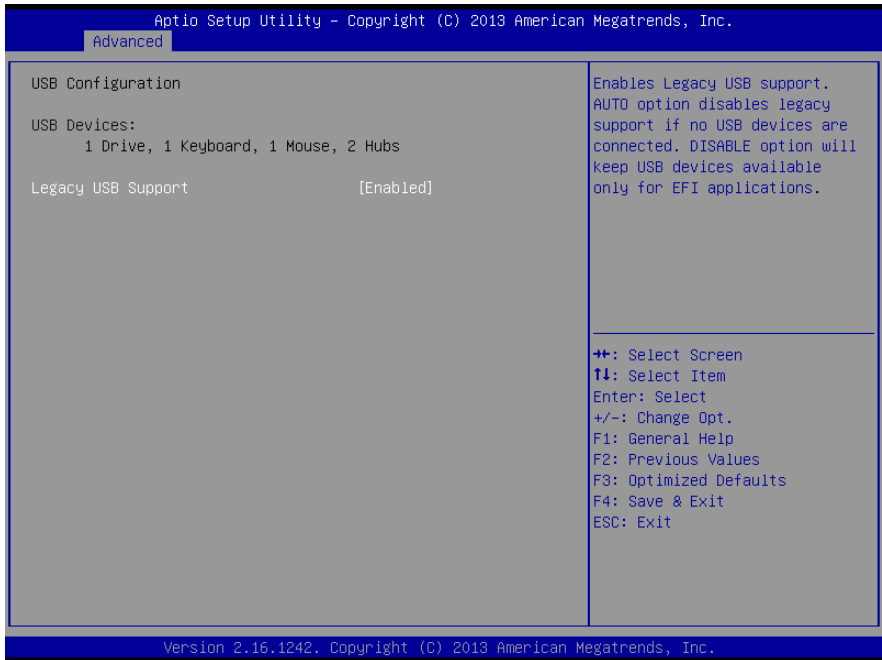
Manual Setting	70	Optimal Default, Failsafe Default
Set Fan at fixed Duty-Cycle Min=0 Max=100 Please input Dec number:		



Options summary:

Monitor Thermal	CPU Temperature(DTS)	Optimal Default, Failsafe Default
	Chassis Temperature(CPU)	
	Chassis Temperature(PCH)	
Select monitor thermal source		
Temperature of Start	30	Optimal Default, Failsafe Default
Temperature Of Start		
Temperature Of Off	20	Optimal Default, Failsafe Default
Temperature Of Off		
Start PWM	40	Optimal Default, Failsafe Default
Start PWM		
Slope (PWM)	0 (PWM)	
	1 (PWM)	Optimal Default, Failsafe Default
	2 (PWM)	
	4 (PWM)	
	8 (PWM)	
	16 (PWM)	
	32 (PWM)	
	64 (PWM)	

### 3.4.6 Advanced: USB Configuration



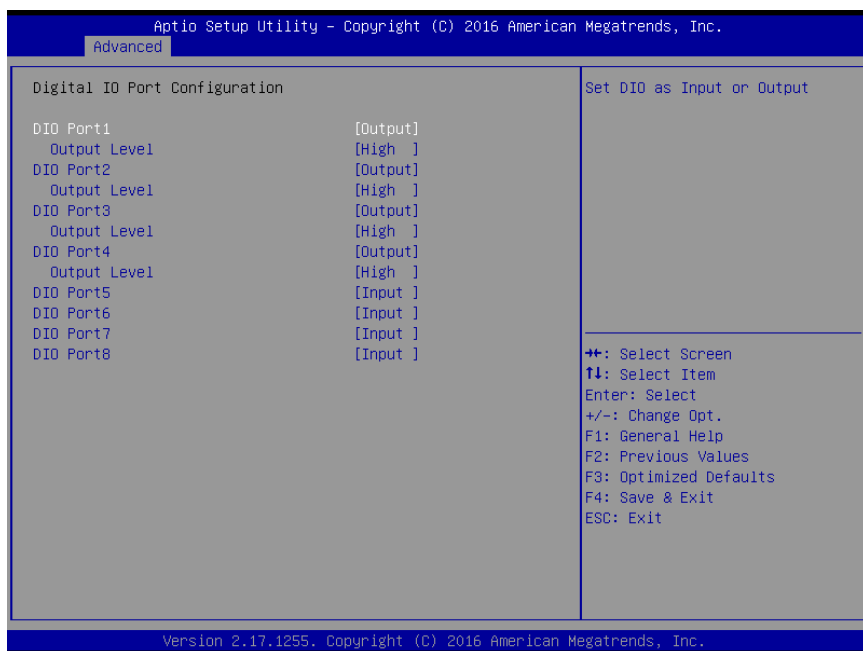
Options summary:

Legacy USB Support	Enabled	Optimal Default, Failsafe Default
	Disabled	
	Auto	
Enables BIOS Support for Legacy USB Support. When enabled, USB can be functional in legacy environment like DOS. AUTO option disables legacy support if no USB devices are connected		
Device Name (Emulation Type)	Auto	Optimal Default, Failsafe Default
	Floppy	
	Forced FDD	
	Hard Disk	
	CDROM	

If Auto. USB devices less than 530MB will be emulated as Floppy and remaining as Floppy and remaining as hard drive. Forced FDD option can be used to force a HDD formatted drive to boot as FDD(Ex. ZIP drive)

USB Port 0/1 function	FCH USB port 8/9	Optimal Default, Failsafe Default
routing	FCH USB port 0/1	

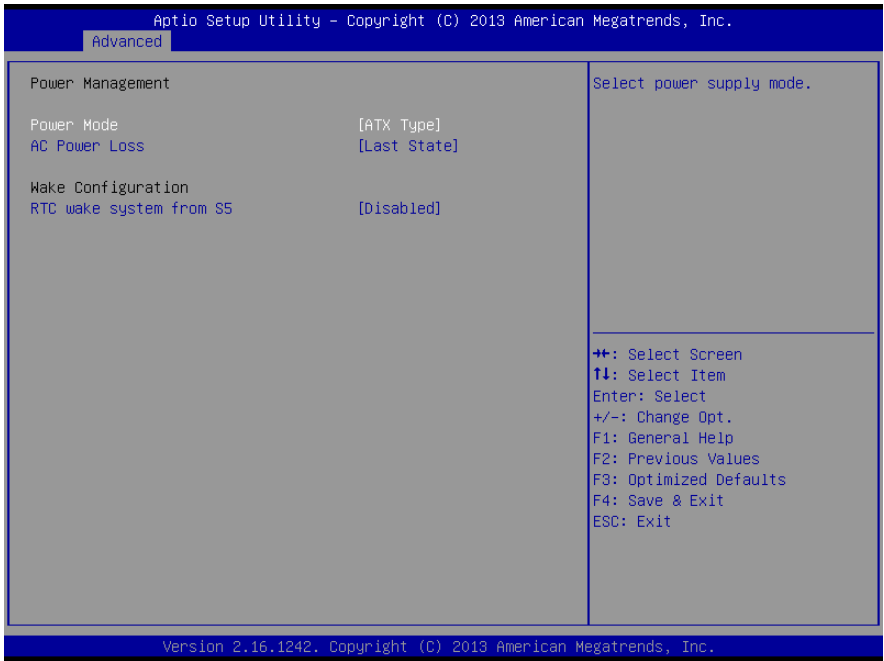
### 3.4.7 Advanced: Digital IO Port Configuration



Options summary:

DIO Port*	Output	
	Input	
Set DIO as Input or Output		
Output Level	High	Optimal Default, Failsafe Default
	Low	
Set output level when DIO pin is output		

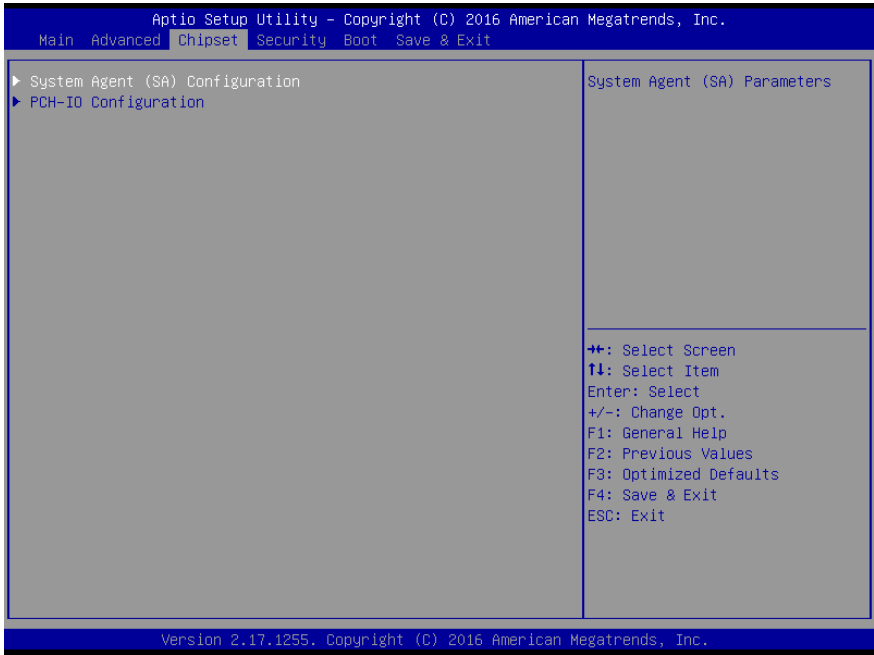
### 3.4.8 Advanced: Power Management



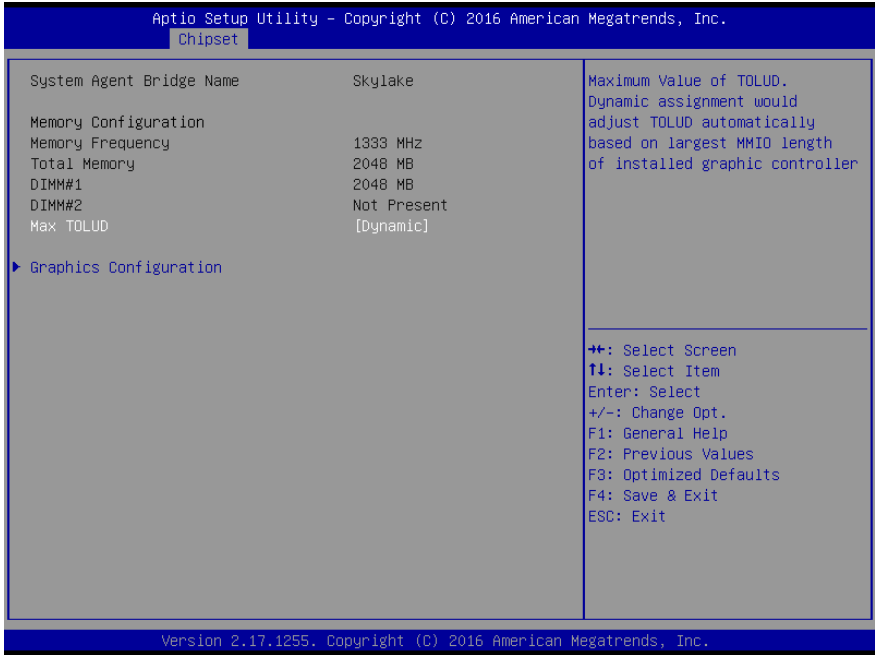
Options summary:

Power Mode	ATX Type	Optimal Default, Failsafe Default
	AT Type	
Select power supply mode.		
Restore on Power Loss	Last State	Optimal Default, Failsafe Default
	Power On	
	Power Off	
Select power state when power is re-applied after a power failure.		
RTC wake system from S5	Disabled	Optimal Default, Failsafe Default
	Fixed Time	
	Dynamic Time	
Enable or disable System wake on alarm event. When enabled, System will wake on the hr::min::sec specified		

### 3.5 Setup submenu: Chipset



### 3.5.1 Chipset: System Agent (SA) Configuration



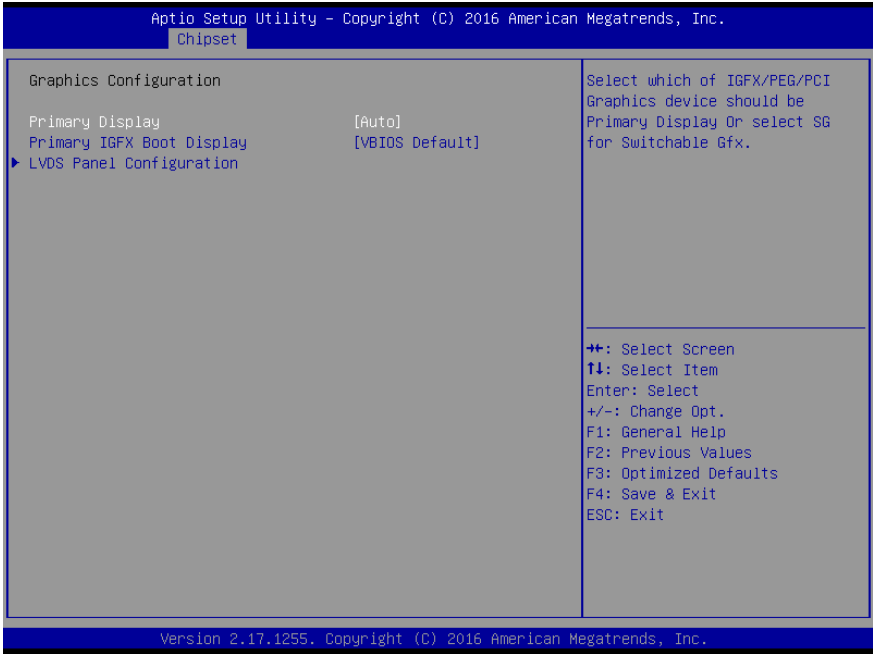
Options summary:

Max TOLUD	Dynamic	Optimal Default, Failsafe Default
	1 GB	
	1.25 GB	
	1.5 GB	
	1.75 GB	
	2 GB	
	2.25 GB	
	2.5 GB	
	2.75 GB	
	3 GB	
	3.25 GB	
	3.5 GB	

Maximum Value of TOLUD Dynamic assignment would adjust TOLUD automatically based on largest MMIO length of installed graphic controller.



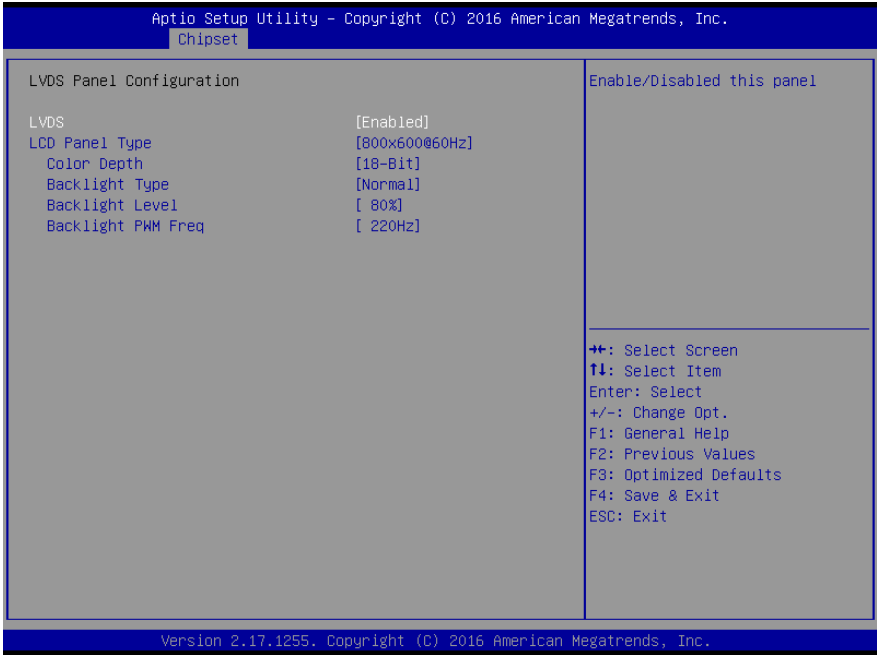
### 3.5.1.1 System Agent (SA) Configuration: Graphics Configuration



Options summary:

Primary Display	Auto	Optimal Default, Failsafe Default
	IGFX	
	PCI-E	
Select which of IGFX/PEG Graphics device should be Primary Display.		
Primary IGFX Boot Display	VBIOS Default	Optimal Default, Failsafe Default
	DDI1/DP	
	DDI2/VGA	
	LVDS/eDP	
Select the Video Device which will be activated during POST. This has no effect if external graphic present. Secondary boot display selection will appear based on your selection.		
Secondary IGFX Boot Display	Disabled	Optimal Default, Failsafe Default
	DDI1/DP	
	DDI2/VGA	
	LVDS/eDP	
Select Secondary Display Device		

### 3.5.1.2 Graphics Configuration: LVDS Panel Configuration

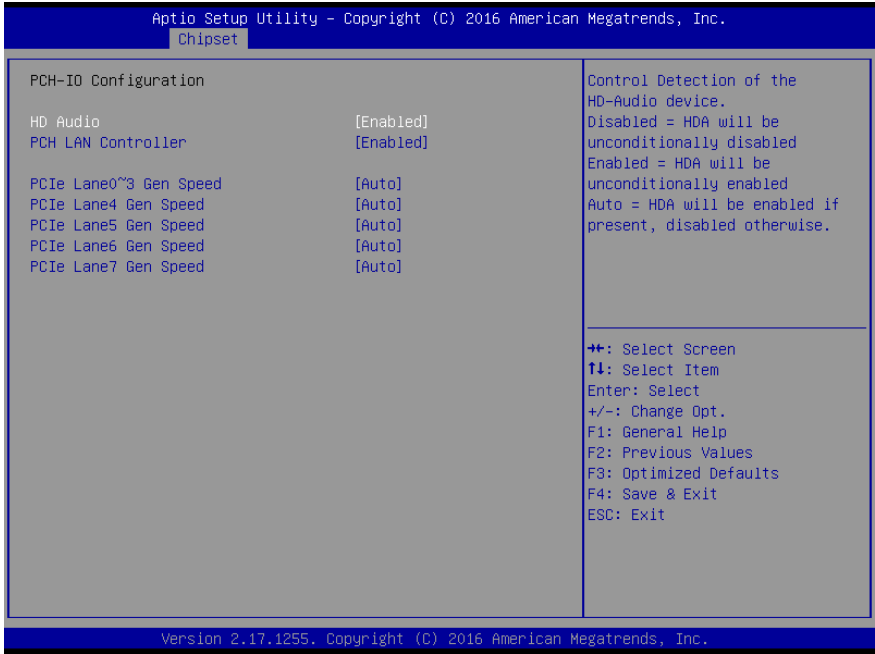


Options summary:

LVDS	Disabled	Optimal Default, Failsafe Default
	Enabled	
Enable/Disabled this panel.		
LVDS Panel Type	640x480,18bit,60Hz	Optimal Default, Failsafe Default
	800x480,18bit,60Hz	
	800x600,18bit,60Hz	
	1024x600,18bit,60Hz	
	1024x768,18bit,60Hz	
	1024x768,24bit,60Hz	
	1280x768,24bit,60Hz	
	1280x1024,48bit,60Hz	
	1366x768,24bit,60Hz	
	1440x900,48bit,60Hz	
	1600x1200,48bit,60Hz	
	1920x1080,48bit,60Hz	
1920x1200,48bit,60Hz		

Select LCD panel used by Internal Graphics Device by selecting the appropriate setup item.		
Color Depth	18-bit	Optimal Default, Failsafe Default
	24-bit	
	36-bit	
	48-bit	
Select panel type		
Backlight Type	Normal	Optimal Default, Failsafe Default
	Inverted	
Select backlight control signal type		
Backlight Level	0%	Optimal Default, Failsafe Default
	10%	
	20%	
	30%	
	40%	
	50%	
	60%	
	70%	
	80%	
	90%	
100%		
Select backlight control level		
Backlight PWM Freq	100Hz	Optimal Default, Failsafe Default
	200Hz	
	220Hz	
	500Hz	
	1KHz	
	2.2KHz	
	6.5KHz	
Select PWM frequency of backlight control signal		

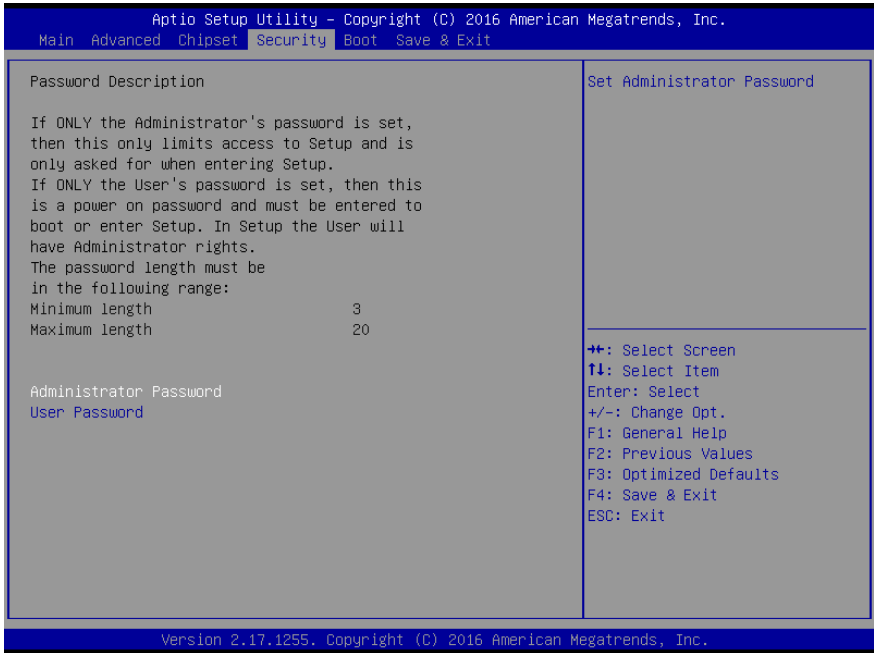
### 3.5.2 Chipset: PCH-IO Configuration



Options summary:

HD Audio	Disabled	Optimal Default, Failsafe Default
	Enabled	
Control Detection of the HD-Audio device. Disabled = HDA will be unconditionally disabled Enabled = HDA will be unconditionally enabled Auto = HDA will be enabled if present, disabled otherwise.		
PCH LAN Controller	Enabled	Optimal Default, Failsafe Default
	Disabled	
Enable or disable onboard NIC.		
PCIe Lane* Gen Speed	Auto	Optimal Default, Failsafe Default
	Gen1	
	Gen2	
	Gen3	
Select PCI Express port speed.		

## 3.6 Setup submenu: Security



### Change User/Administrator Password

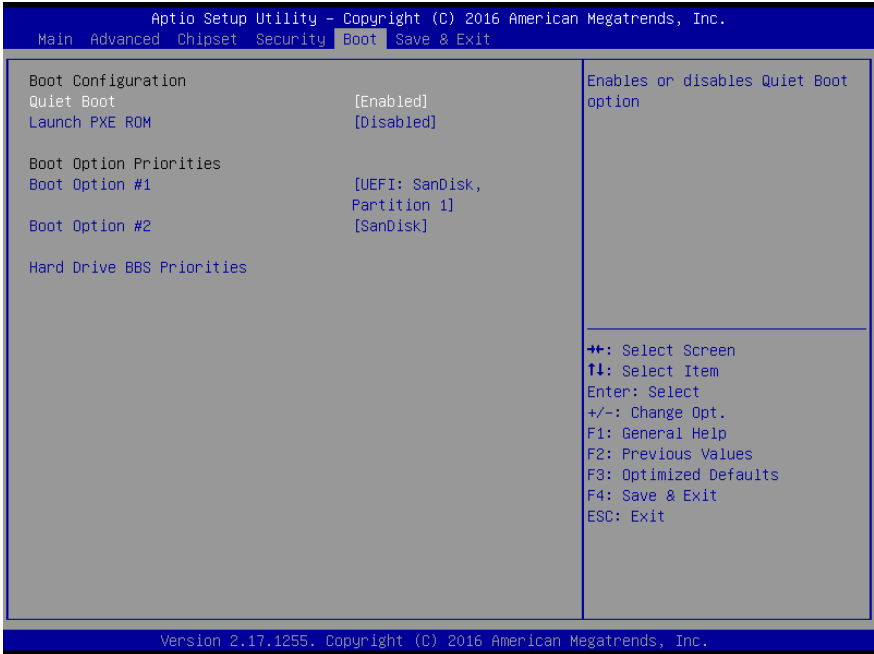
You can set a User Password once an Administrator Password is set. The password will be required during boot up, or when the user enters the Setup utility. Please Note that a User Password does not provide access to many of the features in the Setup utility.

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.

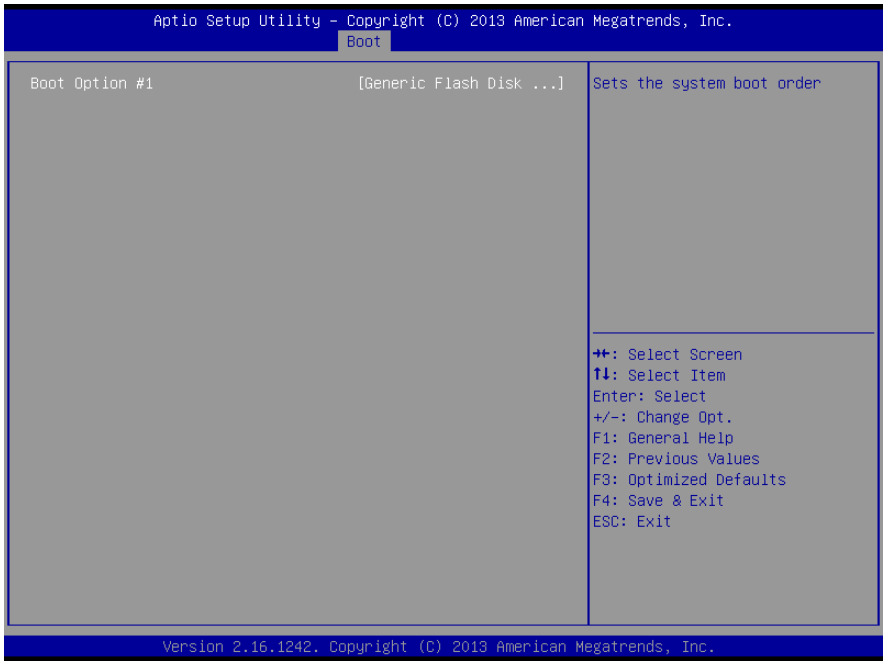
### 3.7 Setup submenu: Boot



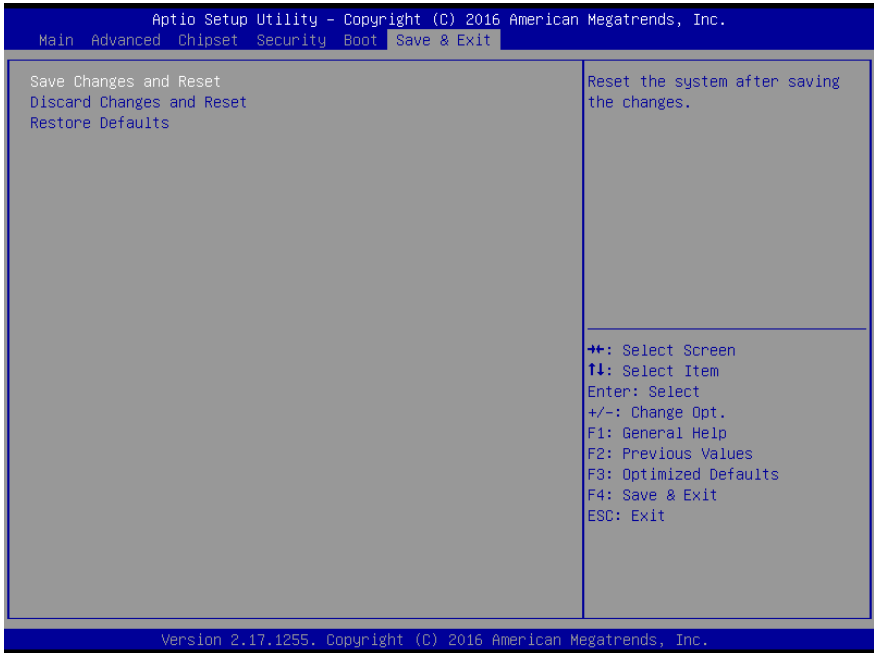
Options summary:

Quiet Boot	Disabled	Optimal Default, Failsafe Default
	Enabled	
En/Disable showing boot logo.		
Launch PXE OpROM	Disabled	Optimal Default, Failsafe Default
	Enabled	
Controls the execution of UEFI and Legacy PXE OpRom		

### 3.7.1 Setup submenu: BBS Priorities



### 3.8 Setup submenu: Save & Exit





# Chapter 4

---

Drivers Installation

## 4.1 Product CD/DVD

---

The COM-SKUC6 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 Chipset Driver

1. Open the **Step1 - Chipset** folder followed by **SetupChipset.exe**
2. Follow the instructions
3. Drivers will be installed automatically

### Step 2 – Install Graphics Driver

1. Open the **Step2 - Graphics** 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 3 – Install LAN Driver

1. Open the **Step3 - LAN** folder followed by **Autorun.exe**
2. Follow the instructions
3. Drivers will be installed automatically

### Step 4 – Install Audio Driver

1. Open the **STEP4 - Audio** folder followed by **0002-Win7\_Win8\_Win81\_R276.exe**

2. Follow the instructions
3. Drivers will be installed automatically

#### Step 5 – Install USB 3.0 Driver (Windows 7 only)

1. Open the **STEP5 – USB3.0** folder and select your OS
2. Open the **.exe** file in the folder
3. Follow the instructions
4. Drivers will be installed automatically

#### Step 6 – Install ME Driver

1. Open the **STEP6 - TXE** folder followed by **SetupME.exe**
2. Follow the instructions
3. Drivers will be installed automatically

# Appendix A

---

## Watchdog Timer Programming

## A.1 Watchdog Timer Initial Program

Table 1 : Embedded BRAM relative register table		
	Default Value	Note
Index	0x284(Note1)	BRAM Index Register
Data	0x285(Note2)	BRAM Data Register
Logical Device Number	0xA8(Note3)	Watch dog Logical Device Number
Function and Device Number	0x00(Note4)	Watch dog Function/Device Number

Table 2 : Watchdog relative register table				
	Option Register	BitNum	Value	Note
Timer Counter	0x00(Note5)		(Note10)	Time of watchdog timer (0~255)
Counting Unit	0x01(Note6)	0(Note7)	0(Note11)	Select time unit. 0: second 1: minute
Watchdog RST pulse width	0x01(Note8)	[3:2](Note9)	0(Note12)	0: 20ms 1: 60ms 2: 100ms 3: 250ms

```
*****
// Embedded BRAM relative definition (Please reference to Table 1)
#define byte EcBRAMIndex //This parameter is represented from Note1
#define byte EcBRAMData //This parameter is represented from Note2
#define byte BRAMLDRReg //This parameter is represented from Note3
#define byte BRAMFnDataReg //This parameter is represented from Note4
#define void EcBRAMWriteByte(byte Offset, byte Value);
#define byte EcBRAMReadByte(byte Offset);
#define void IOWriteByte(byte Offset, byte Value);
#define byte IOReadByte(byte Offset);
// Watch Dog relative definition (Please reference to Table 2)
#define byte TimerReg //This parameter is represented from Note5
#define byte TimerVal // This parameter is represented from Note10
#define byte UnitReg //This parameter is represented from Note6
#define byte UnitBit //This parameter is represented from Note7
#define byte UnitVal //This parameter is represented from Note11
#define byte RSTReg //This parameter is represented from Note8
#define byte RSTBit //This parameter is represented from Note9
#define byte RSTVal //This parameter is represented from Note12
*****
```

```
*****
VOID Main(){
    // Procedure : AaeonWDTConfig
    // (byte)Timer : Time of WDT timer.(0x00~0xFF)
    // (boolean)Unit : Select time unit(0: second, 1: minute).
    AaeonWDTConfig();

    // Procedure : AaeonWDTEnable
    // This procedure will enable the WDT counting.
    AaeonWDTEnable();
}
*****
```

```
*****
// Procedure : AaeonWDTEnable
VOID AaeonWDTEnable (){
    WDTEnableDisable(1);
}

// Procedure : AaeonWDTConfig
VOID AaeonWDTConfig (){
    // Disable WDT counting
    WDTEnableDisable(0);
    // WDT relative parameter setting
    WDTParameterSetting();
}

VOID WDTEnableDisable(byte Value){
    ECBRAMWriteByte(TimerReg , Value);
}

VOID WDTParameterSetting(){
    Byte TempByte;

    // Watchdog Timer counter setting
    ECBRAMWriteByte(TimerReg , TimerVal);
    // WDT counting unit setting
    TempByte = ECBRAMReadByte(UnitReg);
    TempByte |= (UnitVal << UnitBit);
    ECBRAMWriteByte(UnitReg , TempByte);
    // WDT RST pulse width setting
    TempByte = ECBRAMReadByte(RSTReg);
    TempByte |= (RSTVal << RSTBit);
    ECBRAMWriteByte(RSTReg , TempByte);
}
*****
```



```

*****
VOID  ECBRAMWriteByte(byte OPReg, byte OPBit, byte Value){
    IOWriteByte(EcBRAMIndex, 0x10);
    IOWriteByte(EcBRAMData, BRAMLDNReg);
    IOWriteByte(EcBRAMIndex, 0x11);
    IOWriteByte(EcBRAMData, BRAMFnDataReg);

    IOWriteByte(EcBRAMIndex, 0x13 + OPReg);
    IOWriteByte(EcBRAMData, Value);

    IOWriteByte(EcBRAMIndex, 0x12);
    IOWriteByte(EcBRAMData, 0x30);          //Write start
}

Byte  ECBRAMReadByte(byte OPReg){
    IOWriteByte(EcBRAMIndex, 0x10);
    IOWriteByte(EcBRAMData, BRAMLDNReg);
    IOWriteByte(EcBRAMIndex, 0x11);
    IOWriteByte(EcBRAMData, BRAMFnDataReg);

    IOWriteByte(EcBRAMIndex, 0x12);
    IOWriteByte(EcBRAMData, 0x10);        //Read start

    IOWriteByte(EcBRAMIndex, 0x13 + OPReg);
    Return    IORReadByte(EcBRAMData, Value);
}
*****








































```

# Appendix B

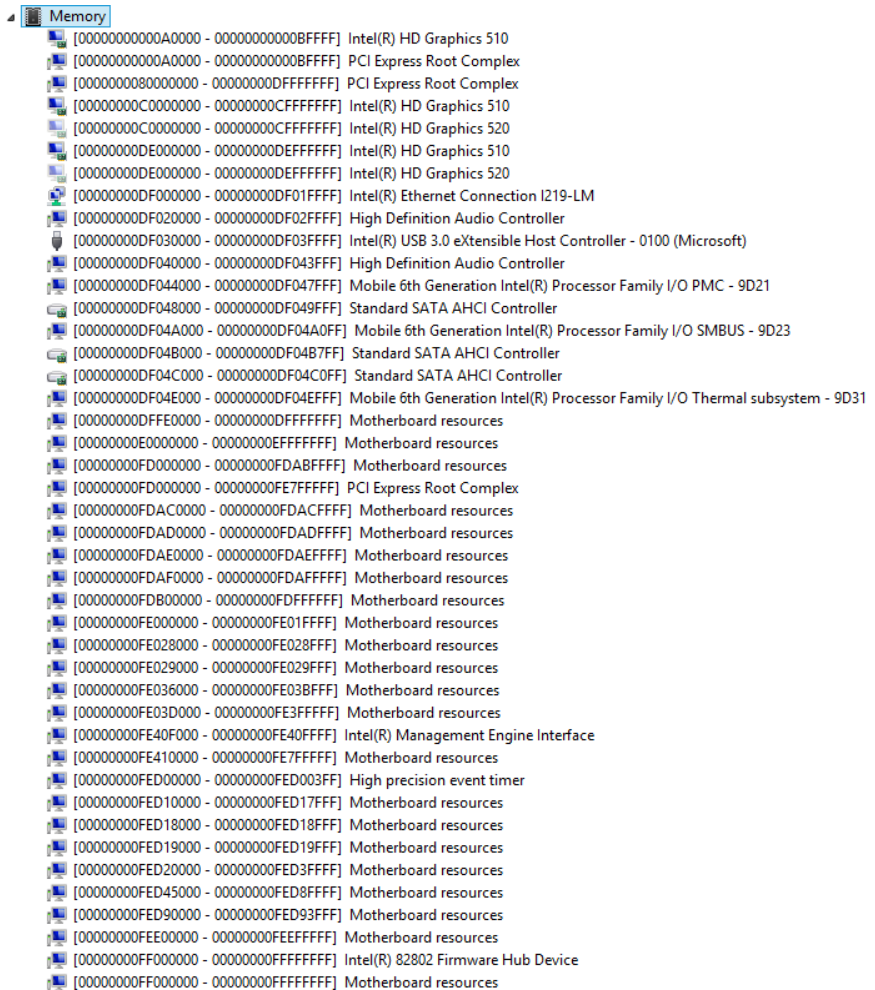
---

I/O Information

## B.1 I/O Address Map

Input/output (I/O)	
	[0000000000000000 - 000000000000CF7] PCI Express Root Complex
	[0000000000000020 - 000000000000021] Programmable interrupt controller
	[0000000000000024 - 000000000000025] Programmable interrupt controller
	[0000000000000028 - 000000000000029] Programmable interrupt controller
	[000000000000002C - 00000000000002D] Programmable interrupt controller
	[000000000000002E - 00000000000002F] Motherboard resources
	[0000000000000030 - 000000000000031] Programmable interrupt controller
	[0000000000000034 - 000000000000035] Programmable interrupt controller
	[0000000000000038 - 000000000000039] Programmable interrupt controller
	[000000000000003C - 00000000000003D] Programmable interrupt controller
	[0000000000000040 - 000000000000043] System timer
	[000000000000004E - 00000000000004F] Motherboard resources
	[0000000000000050 - 000000000000053] System timer
	[0000000000000060 - 000000000000060] Standard PS/2 Keyboard
	[0000000000000061 - 000000000000061] Motherboard resources
	[0000000000000063 - 000000000000063] Motherboard resources
	[0000000000000064 - 000000000000064] Standard PS/2 Keyboard
	[0000000000000065 - 000000000000065] Motherboard resources
	[0000000000000067 - 000000000000067] Motherboard resources
	[0000000000000070 - 000000000000070] Motherboard resources
	[0000000000000070 - 000000000000077] System CMOS/real time clock
	[0000000000000080 - 000000000000080] Motherboard resources
	[0000000000000092 - 000000000000092] 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
	[00000000000002C8 - 00000000000002CF] Communications Port (COM10)
	[00000000000002D8 - 00000000000002DF] Communications Port (COM9)
	[00000000000002F8 - 00000000000002FF] Communications Port (COM2)
	[0000000000000378 - 000000000000037F] Printer Port (LPT1)
	[00000000000003B0 - 00000000000003BB] Intel(R) HD Graphics 510
	[00000000000003C0 - 00000000000003DF] Intel(R) HD Graphics 510
	[00000000000003F8 - 00000000000003FF] Communications Port (COM1)
	[00000000000004D0 - 00000000000004D1] Programmable interrupt controller
	[0000000000000680 - 000000000000069F] Motherboard resources










































## B.2 Memory Address Map























































































The image shows a screenshot of the Windows System Information tool, specifically the 'Memory' section. The list displays memory addresses in hexadecimal format, each associated with a specific hardware component or resource. The components include Intel(R) HD Graphics 510 and 520, PCI Express Root Complex, Intel(R) Ethernet Connection I219-LM, High Definition Audio Controller, Intel(R) USB 3.0 eXtensible Host Controller - 0100 (Microsoft), Mobile 6th Generation Intel(R) Processor Family I/O PMC - 9D21, Standard SATA AHCI Controller, Mobile 6th Generation Intel(R) Processor Family I/O SMBUS - 9D23, Mobile 6th Generation Intel(R) Processor Family I/O Thermal subsystem - 9D31, and Intel(R) Management Engine Interface. A large number of entries are labeled as 'Motherboard resources'.











































Memory Address Range	Component
[0000000000A0000 - 0000000000BFFFFF]	Intel(R) HD Graphics 510
[0000000000A0000 - 0000000000BFFFFF]	PCI Express Root Complex
[0000000080000000 - 00000000DFFFFFFF]	PCI Express Root Complex
[00000000C0000000 - 00000000CFFFFFFF]	Intel(R) HD Graphics 510
[00000000C0000000 - 00000000CFFFFFFF]	Intel(R) HD Graphics 520
[00000000DE000000 - 00000000DEFFFFFF]	Intel(R) HD Graphics 510
[00000000DE000000 - 00000000DEFFFFFF]	Intel(R) HD Graphics 520
[00000000DF000000 - 00000000DF01FFFF]	Intel(R) Ethernet Connection I219-LM
[00000000DF020000 - 00000000DF02FFFF]	High Definition Audio Controller
[00000000DF030000 - 00000000DF03FFFF]	Intel(R) USB 3.0 eXtensible Host Controller - 0100 (Microsoft)
[00000000DF040000 - 00000000DF043FFF]	High Definition Audio Controller
[00000000DF044000 - 00000000DF047FFF]	Mobile 6th Generation Intel(R) Processor Family I/O PMC - 9D21
[00000000DF048000 - 00000000DF049FFF]	Standard SATA AHCI Controller
[00000000DF04A000 - 00000000DF04AFFF]	Mobile 6th Generation Intel(R) Processor Family I/O SMBUS - 9D23
[00000000DF04B000 - 00000000DF04B7FF]	Standard SATA AHCI Controller
[00000000DF04C000 - 00000000DF04C0FF]	Standard SATA AHCI Controller
[00000000DF04E000 - 00000000DF04EFFF]	Mobile 6th Generation Intel(R) Processor Family I/O Thermal subsystem - 9D31
[00000000DFFE0000 - 00000000DFFFFFFF]	Motherboard resources
[00000000E0000000 - 00000000EFFFFFFF]	Motherboard resources
[00000000FD000000 - 00000000FDABFFFF]	Motherboard resources
[00000000FD000000 - 00000000FE7FFFFF]	PCI Express Root Complex
[00000000FDAC0000 - 00000000FDACFFFF]	Motherboard resources
[00000000FDAD0000 - 00000000FDADFFFF]	Motherboard resources
[00000000FDAE0000 - 00000000FDAEFFFF]	Motherboard resources
[00000000FDAF0000 - 00000000FDAFFFFF]	Motherboard resources
[00000000FDB00000 - 00000000FDBFFFFF]	Motherboard resources
[00000000FE000000 - 00000000FE01FFFF]	Motherboard resources
[00000000FE028000 - 00000000FE028FFF]	Motherboard resources
[00000000FE029000 - 00000000FE029FFF]	Motherboard resources
[00000000FE036000 - 00000000FE03BFFF]	Motherboard resources
[00000000FE03D000 - 00000000FE3FFFFF]	Motherboard resources
[00000000FE40F000 - 00000000FE40FFFF]	Intel(R) Management Engine Interface
[00000000FE410000 - 00000000FE7FFFFF]	Motherboard resources
[00000000FED00000 - 00000000FED003FF]	High precision event timer
[00000000FED10000 - 00000000FED17FFF]	Motherboard resources
[00000000FED18000 - 00000000FED18FFF]	Motherboard resources
[00000000FED19000 - 00000000FED19FFF]	Motherboard resources
[00000000FED20000 - 00000000FED3FFFF]	Motherboard resources
[00000000FED45000 - 00000000FED8FFFF]	Motherboard resources
[00000000FED90000 - 00000000FED93FFF]	Motherboard resources
[00000000FEE00000 - 00000000FEEFFFFF]	Motherboard resources
[00000000FF000000 - 00000000FFFFFFF]	Intel(R) 82802 Firmware Hub Device
[00000000FF000000 - 00000000FFFFFFF]	Motherboard resources

## B.3 IRQ Mapping Chart











































Interrupt request (IRQ)	
	(ISA) 0x00000000 (00) System timer
	(ISA) 0x00000001 (01) Standard PS/2 Keyboard
	(ISA) 0x00000003 (03) Communications Port (COM2)
	(ISA) 0x00000004 (04) Communications Port (COM1)
	(ISA) 0x00000005 (05) Printer Port (LPT1)
	(ISA) 0x00000008 (08) System CMOS/real time clock
	(ISA) 0x0000000A (10) Communications Port (COM10)
	(ISA) 0x0000000B (11) Communications Port (COM9)
	(ISA) 0x0000000B (11) Intel(R) HD Graphics 520
	(ISA) 0x0000000C (12) Logitech PS/2 Port Mouse
	(ISA) 0x0000000E (14) Motherboard resources
	(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) 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) 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) 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
 (ISA) 0x00000130 (304)	Microsoft ACPI-Compliant System
 (ISA) 0x00000131 (305)	Microsoft ACPI-Compliant System
 (ISA) 0x00000132 (306)	Microsoft ACPI-Compliant System
 (ISA) 0x00000133 (307)	Microsoft ACPI-Compliant System
 (ISA) 0x00000134 (308)	Microsoft ACPI-Compliant System
 (ISA) 0x00000135 (309)	Microsoft ACPI-Compliant System
 (ISA) 0x00000136 (310)	Microsoft ACPI-Compliant System
 (ISA) 0x00000137 (311)	Microsoft ACPI-Compliant System
 (ISA) 0x00000138 (312)	Microsoft ACPI-Compliant System
 (ISA) 0x00000139 (313)	Microsoft ACPI-Compliant System
 (ISA) 0x0000013A (314)	Microsoft ACPI-Compliant System
 (ISA) 0x0000013B (315)	Microsoft ACPI-Compliant System
 (ISA) 0x0000013C (316)	Microsoft ACPI-Compliant System
 (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
 (ISA) 0x00000144 (324)	Microsoft ACPI-Compliant System
 (ISA) 0x00000145 (325)	Microsoft ACPI-Compliant System
 (ISA) 0x00000146 (326)	Microsoft ACPI-Compliant System
 (ISA) 0x00000147 (327)	Microsoft ACPI-Compliant System
 (ISA) 0x00000148 (328)	Microsoft ACPI-Compliant System
 (ISA) 0x00000149 (329)	Microsoft ACPI-Compliant System
 (ISA) 0x0000014A (330)	Microsoft ACPI-Compliant System
 (ISA) 0x0000014B (331)	Microsoft ACPI-Compliant System
 (ISA) 0x0000014C (332)	Microsoft ACPI-Compliant System
 (ISA) 0x0000014D (333)	Microsoft ACPI-Compliant System
 (ISA) 0x0000014E (334)	Microsoft ACPI-Compliant System
 (ISA) 0x0000014F (335)	Microsoft ACPI-Compliant System
 (ISA) 0x00000150 (336)	Microsoft ACPI-Compliant System
 (ISA) 0x00000151 (337)	Microsoft ACPI-Compliant System
 (ISA) 0x00000152 (338)	Microsoft ACPI-Compliant System
 (ISA) 0x00000153 (339)	Microsoft ACPI-Compliant System
 (ISA) 0x00000154 (340)	Microsoft ACPI-Compliant System
 (ISA) 0x00000155 (341)	Microsoft ACPI-Compliant System
 (ISA) 0x00000156 (342)	Microsoft ACPI-Compliant System

 (ISA) 0x00000157 (343)	Microsoft ACPI-Compliant System
 (ISA) 0x00000158 (344)	Microsoft ACPI-Compliant System
 (ISA) 0x00000159 (345)	Microsoft ACPI-Compliant System
 (ISA) 0x0000015A (346)	Microsoft ACPI-Compliant System
 (ISA) 0x0000015B (347)	Microsoft ACPI-Compliant System
 (ISA) 0x0000015C (348)	Microsoft ACPI-Compliant System
 (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
 (ISA) 0x0000018A (394)	Microsoft ACPI-Compliant System
 (ISA) 0x0000018B (395)	Microsoft ACPI-Compliant System
 (ISA) 0x0000018C (396)	Microsoft ACPI-Compliant System
 (ISA) 0x0000018D (397)	Microsoft ACPI-Compliant System
 (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
 (ISA) 0x000001D0 (464)	Microsoft ACPI-Compliant System
 (ISA) 0x000001D1 (465)	Microsoft ACPI-Compliant System
 (ISA) 0x000001D2 (466)	Microsoft ACPI-Compliant System
 (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) 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

-  (PCI) 0x0000000B (11) Mobile 6th Generation Intel(R) Processor Family I/O Thermal subsystem - 9D31
-  (PCI) 0x0000000B (11) Mobile 6th Generation Intel(R) Processor Family I/O SMBUS - 9D23
-  (PCI) 0x00000010 (16) High Definition Audio Controller
-  (PCI) 0x00000010 (16) Standard SATA AHCI Controller
-  (PCI) 0xFFFFFFF8 (-5) Intel(R) Management Engine Interface
-  (PCI) 0xFFFFFFF4 (-4) Intel(R) USB 3.0 eXtensible Host Controller - 0100 (Microsoft)
-  (PCI) 0xFFFFFFF3 (-3) Intel(R) HD Graphics 510
-  (PCI) 0xFFFFFFF2 (-2) Intel(R) Ethernet Connection I219-LM

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# Appendix C

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Programming Digital I/O

## C.1 Digital I/O Register

**Table 1 : Embedded BRAM relative register table**

	Default Value	Note
Index	0x284(Note1)	BRAM Index Register
Data	0x285(Note2)	BRAM Data Register
Logical Device Number	0xA2(Note3)	Watch dog Logical Device Number
IO Direction Function and Device Number	0x00(Note4)	DIO Input/Output Function/Device Number
IO Vaule/Status Function and Device Number	0x01(Note5)	DIO Output Data Function/Device Number

**Table 2 : Digital I/O relative register table**

	Register			
	Option Register	BitNum	Value	Note
GPI0 Pin Status	0x00(Note6)	0(Note7)	(Note15)	GPA2
GPI1 Pin Status	0x00(Note6)	1(Note8)	(Note16)	GPA3
GPI2 Pin Status	0x00(Note6)	2(Note9)	(Note17)	GPA4
GPI3 Pin Status	0x00(Note6)	3(Note10)	(Note18)	GPA5
GPO0 Pin Status	0x00(Note6)	4(Note11)	(Note19)	GPJ0
GPO1 Pin Status	0x00(Note6)	5(Note12)	(Note20)	GPJ1
GPO2 Pin Status	0x00(Note6)	6(Note13)	(Note21)	GPJ2
GPO3 Pin Status	0x00(Note6)	7(Note14)	(Note22)	GPJ3



## C.2 Digital I/O Sample Program

```
*****
// Embedded BRAM relative definition (Please reference to Table 1)
#define byte EcBRAMIndex //This parameter is represented from Note1
#define byte EcBRAMData //This parameter is represented from Note2
#define byte BRAMLDNReg //This parameter is represented from Note3
#define byte BRAMFnData0Reg //This parameter is represented from Note4
#define byte BRAMFnData1Reg //This parameter is represented from Note5
#define void EcBRAMWriteByte(byte Offset, byte Value);
#define byte EcBRAMReadByte(byte Offset);
#define void IOWriteByte(byte Offset, byte Value);
#define byte IOReadByte(byte Offset);
// Digital Input Status relative definition (Please reference to Table 2)
#define byte DIO0ToDIO7Reg // This parameter is represented from Note6
#define byte DIO0Bit // This parameter is represented from Note7
#define byte DIO1Bit // This parameter is represented from Note8
#define byte DIO2Bit // This parameter is represented from Note9
#define byte DIO3Bit // This parameter is represented from Note10
#define byte DIO4Bit // This parameter is represented from Note11
#define byte DIO5Bit // This parameter is represented from Note12
#define byte DIO6Bit // This parameter is represented from Note13
#define byte DIO7Bit // This parameter is represented from Note14
#define byte DIO0Val // This parameter is represented from Note15
#define byte DIO1Val // This parameter is represented from Note16
#define byte DIO2Val // This parameter is represented from Note17
#define byte DIO3Val // This parameter is represented from Note18
#define byte DIO4Val // This parameter is represented from Note19
#define byte DIO5Val // This parameter is represented from Note20
#define byte DIO6Val // This parameter is represented from Note21
#define byte DIO7Val // This parameter is represented from Note22
*****
```

```
*****
VOID Main(){
    Boolean PinStatus ;

    // Procedure : AaeonReadPinStatus
    // Input :
    //     Example, Read Digital I/O Pin 3 status
    // Output :
    //     InputStatus :
    //         0: Digital I/O Pin level is low
    //         1: Digital I/O Pin level is High
    PinStatus = AaeonReadPinStatus(DIO0ToDIO7Reg, DIO3Bit);

    // Procedure : AaeonSetOutputLevel
    // Input :
    //     Example, Set Digital I/O Pin 6 level
    AaeonSetOutputLevel(DIO0ToDIO7Reg, DIO6Bit, DIO6Val);
}
*****
```

```
*****
Boolean  AaeonReadPinStatus(byte OptionReg, byte BitNum){
    Byte TempByte;

    TempByte = ECBRAMReadByte(BRAMFnData1Reg, OptionReg);
    If (TempByte & BitNum == 0)
        Return 0;
    Return 1;
}
VOID  AaeonSetOutputLevel(byte OptionReg, byte BitNum, byte Value){
    Byte TempByte;

    TempByte = ECBRAMReadByte(BRAMFnData1Reg, OptionReg);
    TempByte |= (Value << BitNum);
    ECBRAMWriteByte(OptionReg, BitNum, Value);
}
*****
```

```

*****
VOID  ECBRAMWriteByte(byte OPReg, byte OPBit, byte Value){
    IOWriteByte(EcBRAMIndex, 0x10);
    IOWriteByte(EcBRAMData, BRAMLDNReg);
    IOWriteByte(EcBRAMIndex, 0x11);
    IOWriteByte(EcBRAMData, BRAMFnDataReg);

    IOWriteByte(EcBRAMIndex, 0x13 + OPReg);
    IOWriteByte(EcBRAMData, Value);

    IOWriteByte(EcBRAMIndex, 0x12);
    IOWriteByte(EcBRAMData, 0x30);          //Write start
}

Byte  ECBRAMReadByte(byte FnDataReg, byte OPReg){
    IOWriteByte(EcBRAMIndex, 0x10);
    IOWriteByte(EcBRAMData, BRAMLDNReg);
    IOWriteByte(EcBRAMIndex, 0x11);
    IOWriteByte(EcBRAMData, FnDataReg);

    IOWriteByte(EcBRAMIndex, 0x12);
    IOWriteByte(EcBRAMData, 0x10);        //Read start

    IOWriteByte(EcBRAMIndex, 0x13 + OPReg);
    Return    IOReadByte(EcBRAMData, Value);
}
*****

```

# Appendix D

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for Users

## D.1 Notes for Users

---

Please observe the following items to ensure optimal performance:

1. Always use a new SSD with the latest firmware and SATA Gen3 cable for optimal performance and compatibility.
2. With the EHCI controller no longer available on the 6th Gen Intel® Core™ platforms, it is recommended to install Windows 7 through a SATA bus, eg SATA DVD ROM, or refer to <https://downloadcenter.intel.com/download/25476/Windows-7-USB-3-0-Creator-Utility> to create a USB installer.
3. The Skylake platform supports six PCIe "device" within "ten PCIe Lanes" by default. Please contact AAEON if more PCIe devices are needed.
4. After booting to the OS, the board's display priority will be taken over by the graphics driver. In case when LVDS output is not needed, please disable LVDS in BIOS to prevent the driver from automatically setting LVDS as the output device.