

**COM-QM57**

Intel® Core™i7/i5 /Celeron® Processor

Intel® QM57

10/100/1000Base-TX

4 SATA 3.0Gb/s, 1 PATA

8 USB2.0, GPIO

4 PCI, 1 PCI-E[x16], 6 PCI-E[x1]

LPC Bus, SMBus

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## Packing List

Before you begin installing your card, please make sure that the following materials have been shipped:

- 5 M2.5 Screw
- 1 DVD-ROM for manual (in PDF format) and drivers
- 1 COM-QM57

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

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Chapter

1

**General  
Information**

## 1.1 Introduction

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AAEON, a leading embedded boards manufacturer, is pleased to announce the debut of their new generation COM Express Module—COM-QM57. The COM-QM57 is a cutting-edge product that provides high performance and low power consumption in the embedded market.

COM-QM57 adopts the latest Intel® Core™ i7/i5/ Celeron® processor. The system memory deploys with two 204-pin DDR3 SODIMM up to 8 GB. In addition, Intel® 82577LM supports 10/100/1000Base-TX that allows faster network connections. This model applies one PCI-Express[x16] (shared with two DisplayPort™/ two HDMI/ two DVI), PCI-Express[x1] x6 via QM57, four 32-bit PCI, one LPC bus, and one SMBus. Moreover, one PATA and four SATA 3.0Gb/s are configured on the COM-QM57. COM-QM57 also equips eight USB2.0 for flexible I/O expansions.

The display of COM-QM57 supports CRT/LCD, CRT/DVI, LCD/DVI simultaneous/ dual view displays and up to 24-bit dual-channel LVDS. This brand new COM Express Module is developed to cater to the requirements of Automation, Medical, ticket machine, transportation, gaming, KIOSK, and POS/POI applications.



## 1.2 Features

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- Intel® Core™ i7/ i5/ Celeron® Processor
- Intel® QM57
- Dual-channel SODIMM DDR3 800/1066 Memory, Max. 8 GB
- Gigabit Ethernet
- CRT, Up to 24-bit Dual-channel LVDS LCD, DisplayPort™, HDMI, DVI, SDVO
- High Definition Audio Interface
- PATA x 1, SATA 3.0Gb/s x 4
- USB2.0 x 8
- PCI x 4, PCI-Express[x16] x 1, PCI-Express[x1] x 6 (5)
- COM Express Basic Module, Pin-out Type 2, COM.0 Rev.2.0

### 1.3 Specifications

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#### System

- Form Factor COM Express basic module, Pin-out Type 2, COM.0 Rev. 2.0
- Processor Onboard Intel® Core™ i7/ i5/ Celeron® processor
- System Memory 204-pin DDR3 SODIMM x 2, Max. 8 GB (DDR3 800/1066), supports dual-channel function
- Chipset Intel® QM57
- I/O Chipset Intel® QM57
- Ethernet Intel® 82577LM, 10/100/1000Base-TX
- TPM v1.2 (Optional)
- BIOS AMI BIOS SPI type, 2MB ROM
- EEPROM Atmel AT24C02, save BIOS and configuration data (Optional)
- Wake On LAN Yes
- Watchdog Timer ITE8513E-L, 255 levels
- H/W Monitor Chipset Supports CPU temperature monitoring
- Expansion Interface
  - PCI-Express [x16] x 1 (Shared with 2 DisplayPorts/ 2 HDMI's/ 2 DVIs)
  - ==> Can be configured as PCI Express [x8] x 2
  - PCI-Express [x1] x 6 via QM57
  - 32-bit PCI x 4
  - LPC bus x 1
  - SMBus x 1

- Power Requirement Nominal: +12V
- Power Consumption Intel® i5-520E 2.4GHz, DDR3 4GB  
3.11A@+12V, 0.24A@+5V (w/  
ECB-916M)
- Board Size 4.92”(L) x 3.74”(W) (125mm x 95mm)
- Gross Weight 0.66 lb (0.3 Kg)
- Operating Temperature 32°F ~ 140°F (0°C ~ 60°C)
- Storage Temperature -40°F ~ 176°F (-40°C ~ 80°C)
- Operating Humidity 0% ~ 90% relative humidity,  
non-condensing

**Display: Supports CRT/LCD, CRT/DVI, LCD/DVI simultaneous/  
dual view displays**

- Chipset Intel® Core™ i7/ i5/ Celeron®  
processor integrated  
  
Integrates hardware MPEG2 decoder  
supports WMV9 (VC-1) and H.264  
(AVC)
- Memory Shared system memory up to 512MB/  
DVMT 5.0
- Resolution Up to 2048 x 1536 (QXGA) for CRT  
Up to 1920 x 1200 (UXGA) for LCD
- LCD Interface Up to 24-bit dual-channel LVDS
- SDVO/ DVO/ Side Port Supports SDVO x 1 (Shared with  
PCI-Express [x16])
- HDMI Supports HDMI x 2 (Shared with  
PCI-Express [x16]) optional
- DVI Supports DVI x 2 (Shared with  
PCI-Express [x16]) optional

- DisplayPort Supports DisplayPort™ x 2 (Shared with PCI-Express [x16]) optional

**I/O**

- Storage PATA x 1 (One device)  
SATA 3.0Gb/s x 4 via QM57
- USB Port USB 2.0 x 8
- GPIO Up to 4 in and 4 out
- Audio High definition audio

Chapter

2

**Quick  
Installation  
Guide**

## 2.1 Safety Precautions

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### **Warning!**



*Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.*

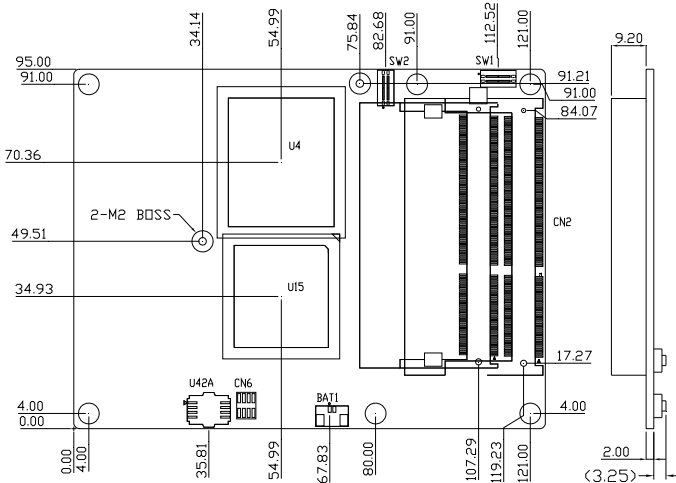
### **Caution!**



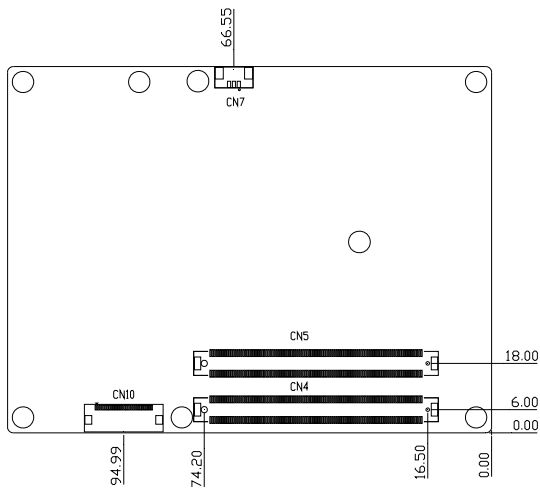
*Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis*

## 2.2 Location and Dimension of Connectors and Switches

### Component Side



### Solder Side







## 2.3 List of Switches

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The board has a number of Switches that allow you to configure your system to suit your application.

The table below shows the function of each of the board's switches:

<b>Label</b>	<b>Function</b>
SW1	AT/ATX & Clear CMOS Setting Switch
SW2	S5 WOL Control & BIOS Load Optimized Setting Switch

## 2.4 List of Connectors

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The board has a number of connectors that allow you to configure your system to suit your application. The table below shows the function of each board's connectors:

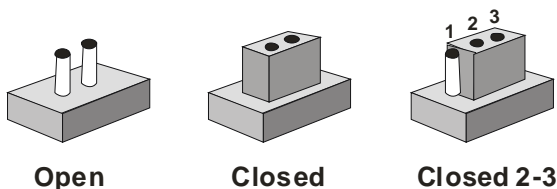
<b>Label</b>	<b>Function</b>
CN4	COM Express ROW A/B Connector
CN5	COM Express ROW C/D Connector
CN7	Fan Power Connector
CN6	SPI Flash Programming Connector (Optional)
CN10	CPLD Flash Programming Connector
BAT1	Battery Connector (Optional)

## 2.5 Setting Jumpers

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You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper you connect the pins with the clip.

To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2 or 2 and 3.



A pair of needle-nose pliers may be helpful when working with jumpers.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any change.

Generally, you simply need a standard cable to make most connections.

## 2.6 AT/ATX & Clear CMOS Setting Switch (SW1)

	ON	OFF
1	AT power-on mode	ATX power-on mode
2	Clear CMOS	Normal RTC

## 2.7 S5 WOL Control & BIOS Load Optimized Setting Switch (SW2)

	ON	OFF
1	S5 WOL Control by HW	S5 WOL Control by EC
2	BIOS Load Optimized Default	BIOS Don't Load Optimized Default

## 2.8 COM Express Connector (Row A & B) (CN4)

Row A		Row B	
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	LPC_DRQ0#
A9	GBE0_MDI1-	B9	LPC_DRQ1#
A10	GBE0_MDI1+	B10	LPC_CLK
A11	GND (FIXED)	B11	GND (FIXED)
A12	GBE0_MDI0-	B12	PWRBTN#

A13	GBE0_MDI0+	B13	SMB_CK
A14	GBE0_CTREF	B14	SMB_DAT
A15	SUS_S3#	B15	SMB_ALERT#
A16	SATA0_TX+	B16	SATA1_TX+
A17	SATA0_TX-	B17	SATA1_TX-
A18	SUS_S4#	B18	SUS_STAT#
A19	SATA0_RX+	B19	SATA1_RX+
A20	SATA0_RX-	B20	SATA1_RX-
A21	GND (FIXED)	B21	GND (FIXED)
A22	SATA2_TX+	B22	SATA_TXP3
A23	SATA2_TX-	B23	SATA_TXN3
A24	SUS_S5#	B24	PWR_OK
A25	SATA2_RX+	B25	SATA_RXP3
A26	SATA2_RX-	B26	SATA_RXN3
A27	BATLOW#	B27	WDT
A28	ATA_ACT#	B28	AC_SDIN2
A29	AC_SYNC	B29	AC_SDIN1
A30	AC_RST#	B30	AC_SDIN0
A31	GND (FIXED)	B31	GND (FIXED)
A32	AC_BITCLK	B32	SPKR
A33	AC_SDOUT	B33	I2C_CK
A34	BIOS_DIS0#	B34	I2C_DAT
A35	THRMTRIP#	B35	THRM#
A36	USB6-	B36	USB7-

A37	USB6+	B37	USB7+
A38	USB_6_7_OC#	B38	USB_4_5_OC#
A39	USB4-	B39	USB5-
A40	USB4+	B40	USB5+
A41	GND (FIXED)	B41	GND (FIXED)
A42	USB2-	B42	USB3-
A43	USB2+	B43	USB3+
A44	USB_2_3_OC#	B44	USB_0_1_OC#
A45	USB0-	B45	USB1-
A46	USB0+	B46	USB1+
A47	VCC_RTC	B47	EXCD1_PERST#
A48	EXCD0_PERST#	B48	EXCD1_CPPE#
A49	EXCD0_CPPE#	B49	SYS_RESET#
A50	LPC_SERIRQ	B50	CB_RESET#
A51	GND (FIXED)	B51	GND (FIXED)
A52	PCIE_TX5+	B52	PCIE_RX5+
A53	PCIE_TX5-	B53	PCIE_RX5-
A54	GPI0	B54	GPO1
A55	PCIE_TX4+	B55	PCIE_RX4+
A56	PCIE_TX4-	B56	PCIE_RX4-
A57	GND	B57	GPO2
A58	PCIE_TX3+	B58	PCIE_RX3+
A59	PCIE_TX3-	B59	PCIE_RX3-
A60	GND (FIXED)	B60	GND (FIXED)

A61	PCIE_TX2+	B61	PCIE_RX2+
A62	PCIE_TX2-	B62	PCIE_RX2-
A63	GPI1	B63	GPO3
A64	PCIE_TX1+	B64	PCIE_RX1+
A65	PCIE_TX1-	B65	PCIE_RX1-
A66	GND	B66	WAKE0#
A67	GPI2	B67	WAKE1#
A68	PCIE_TX0+	B68	PCIE_RX0+
A69	PCIE_TX0-	B69	PCIE_RX0-
A70	GND (FIXED)	B70	GND (FIXED)
A71	LVDS_A0+	B71	LVDSB_DATA0
A72	LVDS_A0-	B72	LVDSB_DATA0#
A73	LVDS_A1+	B73	LVDSB_DATA1
A74	LVDS_A1-	B74	LVDSB_DATA1#
A75	LVDS_A2+	B75	LVDSB_DATA2
A76	LVDS_A2-	B76	LVDSB_DATA2#
A77	LVDS_VDD_EN	B77	LVDSB_DATA3
A78	LVDSA_DATA3	B78	LVDSB_DATA3#
A79	LVDSA_DATA3#	B79	LVDS_BKLT_EN
A80	GND (FIXED)	B80	GND (FIXED)
A81	LVDS_A_CK+	B81	LVDSB_CLK
A82	LVDS_A_CK-	B82	LVDSB_CLK#
A83	LVDS_I2C_CK	B83	LVDS_BKLT_CTRL
A84	LVDS_I2C_DAT	B84	VCC_5V_SBY

A85	GPI3	B85	VCC_5V_SBY
A86	KBD_RST#	B86	VCC_5V_SBY
A87	KBD_A20GATE	B87	VCC_5V_SBY
A88	PCIE0_CK_REF+	B88	BISO_DIS1#
A89	PCIE0_CK_REF-	B89	VGA_RED
A90	GND (FIXED)	B90	GND (FIXED)
A91	SPI_POWER	B91	VGA_GRN
A92	SPI_MISO	B92	VGA_BLU
A93	GPO0	B93	VGA_HSYNC
A94	SPI_CLK	B94	VGA_VSYNC
A95	SPI_MOSI	B95	VGA_I2C_CK
A96	GND	B96	VGA_I2C_DAT
A97	N.C.	B97	SPI_CS#
A98	N.C.	B98	RSVD
A99	N.C.	B99	RSVD
A100	GND (FIXED)	B100	GND (FIXED)
A101	N.C.	B101	N.C.
A102	N.C.	B102	N.C.
A103	N.C.	B103	N.C.
A104	VCC_12V	B104	VCC_12V
A105	VCC_12V	B105	VCC_12V
A106	VCC_12V	B106	VCC_12V
A107	VCC_12V	B107	VCC_12V
A108	VCC_12V	B108	VCC_12V

A109	VCC_12V	B109	VCC_12V
A110	GND (FIXED)	B110	GND (FIXED)

## 2.9 COM Express Connector (Row C & D) (CN5)

Row C		Row D	
C1	GND (FIXED)	D1	GND (FIXED)
C2	IDE_D7	D2	IDE_D5
C3	IDE_D6	D3	IDE_D10
C4	IDE_D3	D4	IDE_D11
C5	IDE_D15	D5	IDE_D12
C6	IDE_D8	D6	IDE_D4
C7	IDE_D9	D7	IDE_D0
C8	IDE_D2	D8	IDE_REQ
C9	IDE_D13	D9	IDE_IOW#
C10	IDE_D1	D10	IDE_ACK#
C11	GND (FIXED)	D11	GND (FIXED)
C12	IDE_D14	D12	IDE_IRQ
C13	IDE_IORDY	D13	IDE_A0
C14	IDE_IOR#	D14	IDE_A1
C15	PCI_PME#	D15	IDE_A2
C16	PCI_GNT2#	D16	IDE_CS1#
C17	PCI_REQ2#	D17	IDE_CS3#
C18	PCI_GNT1#	D18	IDE_RESET#
C19	PCI_REQ1#	D19	PCI_GNT3#



C20	PCI_GNT0#	D20	PCI_REQ3#
C21	GND (FIXED)	D21	GND (FIXED)
C22	PCI_REQ0#	D22	PCI_AD1
C23	PCI_RESET#	D23	PCI_AD3
C24	PCI_AD0	D24	PCI_AD5
C25	PCI_AD2	D25	PCI_AD7
C26	PCI_AD4	D26	PCI_C/BE0#
C27	PCI_AD6	D27	PCI_AD9
C28	PCI_AD8	D28	PCI_AD11
C29	PCI_AD10	D29	PCI_AD13
C30	PCI_AD12	D30	PCI_AD15
C31	GND (FIXED)	D31	GND (FIXED)
C32	PCI_AD14	D32	PCI_PAR
C33	PCI_C/BE1#	D33	PCI_SERR#
C34	PCI_PERR#	D34	PCI_STOP#
C35	PCI_LOCK#	D35	PCI_TRDY#
C36	PCI_DEVSEL#	D36	PCI_FRAME#
C37	PCI_IRDY#	D37	PCI_AD16
C38	PCI_C/BE2#	D38	PCI_AD18
C39	PCI_AD17	D39	PCI_AD20
C40	PCI_AD19	D40	PCI_AD22
C41	GND (FIXED)	D41	GND (FIXED)
C42	PCI_AD21	D42	PCI_AD24
C43	PCI_AD23	D43	PCI_AD26

C44	PCI_C/BE3#	D44	PCI_AD28
C45	PCI_AD25	D45	PCI_AD30
C46	PCI_AD27	D46	PCI_IRQC#
C47	PCI_AD29	D47	PCI_IRQD#
C48	PCI_AD31	D48	PCI_CLKRUN#
C49	PCI_IRQA#	D49	N.C.
C50	PCI_IRQB#	D50	PCI_CLK
C51	GND (FIXED)	D51	GND (FIXED)
C52	PEG_RXP0	D52	PEG_TXP0
C53	PEG_RXN0	D53	PEG_TXN0
C54	N.C.	D54	PEG_LANE_RV#
C55	PEG_RXP1	D55	PEG_TXP1
C56	PEG_RXN1	D56	PEG_TXN1
C57	N.C.	D57	N.C.
C58	PEG_RXP2	D58	PEG_TXP2
C59	PEG_RXN2	D59	PEG_TXN2
C60	GND (FIXED)	D60	GND (FIXED)
C61	PEG_RXP3	D61	PEG_TXP3
C62	PEG_RXN3	D62	PEG_TXN3
C63	N.C.	D63	DPC_CTRLCLK
C64	N.C.	D64	DPC_CTRLDATA
C65	PEG_RXP4	D65	PEG_TXP4
C66	PEG_RXN4	D66	PEG_TXN4
C67	N.C.	D67	GND

C68	PEG_RXP5	D68	PEG_TXP5
C69	PEG_RXN5	D69	PEG_TXN5
C70	GND (FIXED)	D70	GND (FIXED)
C71	PEG_RXP6	D71	PEG_TXP6
C72	PEG_RXN6	D72	PEG_TXN6
C73	DPB_CTRLDATA	D73	DPB_CTRLCLK
C74	PEG_RXP7	D74	PEG_TXP7
C75	PEG_RXN7	D75	PEG_TXN7
C76	GND	D76	GND
C77	N.C.	D77	IDE_CBLID#
C78	PEG_RXP8	D78	PEG_TXP8
C79	PEG_RXN8	D79	PEG_TXN8
C80	GND (FIXED)	D80	GND (FIXED)
C81	PEG_RXP9	D81	PEG_TXP9
C82	PEG_RXN9	D82	PEG_TXN9
C83	N.C.	D83	N.C.
C84	GND	D84	GND
C85	PEG_RXP10	D85	PEG_TXP10
C86	PEG_RXN10	D86	PEG_TXN10
C87	GND	D87	GND
C88	PEG_RXP11	D88	PEG_TXP11
C89	PEG_RXN11	D89	PEG_TXN11
C90	GND (FIXED)	D90	GND (FIXED)
C91	PEG_RXP12	D91	PEG_TXP12

C92	PEG_RXN12	D92	PEG_TXN12
C93	GND	D93	GND
C94	PEG_RXP13	D94	PEG_TXP13
C95	PEG_RXN13	D95	PEG_TXN13
C96	GND	D96	GND
C97	N.C.	D97	PEG_ENABLE#
C98	PEG_RXP14	D98	PEG_TXP14
C99	PEG_RXN14	D99	PEG_TXN14
C100	GND (FIXED)	D100	GND (FIXED)
C101	PEG_RXP15	D101	PEG_TXP15
C102	PEG_RXN15	D102	PEG_TXN15
C103	GND	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)

## 2.10 Fan Connector (CN7)

Pin	Signal
1	Ground
2	+5 Volt.
3	FAN Sense

## 2.11 CPLD Flash Programming Connector (CN10)

Pin	Signal
1	NC
2	NC
3	GND
4	NC
5	NC
6	KSO3
7	NC
8	NC
9	KSO1
10	NC
11	NC
12	KSO10
13	KSO9
14	KSO8
15	KSO7
16	NC
17	NC
18	KSO6
19	KSI5
20	KSI4
21	KSO5
22	KSI3
23	KSO4
24	KSI2

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25	KSO3
26	KSI1
27	KSO2
28	KSO1
29	KSI0
30	KSO0

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## Below Table for China RoHS Requirements

產品中有毒有害物質或元素名稱及含量

## AAEON Main Board/ Daughter Board/ Backplane

部件名稱	有毒有害物質或元素					
	鉛 (Pb)	汞 (Hg)	鎘 (Cd)	六價鉻 (Cr(VI))	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
印刷電路板 及其電子元件	x	○	○	○	○	○
外部信號 連接器及線材	x	○	○	○	○	○
<p>O：表示該有毒有害物質在該部件所有均質材料中的含量均在 SJ/T 11363-2006 標準規定的限量要求以下。</p> <p>X：表示該有毒有害物質至少在該部件的某一均質材料中的含量超出 SJ/T 11363-2006 標準規定的限量要求。</p> <p>備註：此產品所標示之環保使用期限，系指在一般正常使用狀況下。</p>						

Chapter

3

# AMI BIOS Setup



### 3.1 System Test and Initialization

---

These routines test and initialize board hardware. If the routines encounter an error during the tests, you will either hear a few short beeps or see an error message on the screen. There are two kinds of errors: fatal and non-fatal. The system can usually continue the boot up sequence with non-fatal errors.

#### **System configuration verification**

These routines check the current system configuration against the values stored in the CMOS memory. If they do not match, the program outputs an error message. You will then 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:

1. You are starting your system for the first time
2. You have changed the hardware attached to your system
3. The CMOS memory has lost power and the configuration information has been erased.

The COM-QM57 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

## 3.2 AMI BIOS Setup

---

AMI BIOS ROM has a built-in Setup program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

### Entering Setup

Power on the computer and press <Del> or <F2> immediately. This will allow you to enter Setup.

### Main

Set the date, use tab to switch between date elements.

### Advanced

Enable/disable boot option for legacy network devices.

### Chipset

host bridge parameters.

### Boot

Enables/disables quiet boot option.

### Security

Set setup administrator password.

### Save&Exit

Exit system setup after saving the changes.

Chapter

4

**Driver  
Installation**

The COM-QM57 comes with a DVD-ROM that contains all drivers you need.

***Follow the sequence below to install the drivers:***

- Step 1 – Install Chipset Driver
- Step 2 – Install VGA Driver
- Step 3 – Install LAN Driver
- Step 4 – Install ME Driver
- Step 5 – Install AUDIO Driver
- Step 6 – Install RAID Driver
- Step 7 – Install TPM Driver (Optional)

Please read following instructions for detailed installations.

## 4.1 Installation:

---

Insert the COM-QM57 DVD-ROM into the DVD-ROM Drive. And install the drivers from Step 1 to Step 7 in order.

### Step 1 – Install Chipset Driver

1. Click on the **Step1-CHIPSET** folder and double click on the ***infinst\_autol(9.1.1.1020).exe*** file
2. Follow the instructions that the window shows
3. The system will help you to install the driver automatically

### Step 2 – Install VGA Driver

1. Click on the **Step2-VGA** folder and select the OS your system is
2. Double click on **Setup.exe** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you to install the driver automatically

### Step 3 – Install LAN Driver

1. Click on the **Step3-LAN** folder and select the OS your system is
2. Double click on **.exe** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you to install the driver automatically

### Step 4 – Install ME Driver

1. Click on the **Step4-ME** folder and double click on **Setup.exe** file

2. Follow the instructions that the window shows
3. The system will help you to install the driver automatically

### Step 5 – Install AUDIO Driver

1. Click on the **Step5-AUDIO** folder and select the OS your system is
2. Double click on **Setup.exe** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you to install the driver automatically

### Step 6 – Install RAID Driver

Please refer to Appendix C RAID & AHCI Settings

### Step 7 – Install TPM Driver

1. Click on the **Step7-TPM DRIVER (Option)** folder and select the OS your system is
2. Select the folder of **TPM\_DRIVER** located in each OS folder and double click on the **setup.exe** file
3. After done installing the driver above, click on the folder of **TPM\_HostSW\_3.5\_RC3\_IFX**, and then double click on the **Setup.exe** file
4. Follow the instructions that the window shows you
5. The system will help you install the driver automatically

Appendix

**A**

# Programming the Watchdog Timer

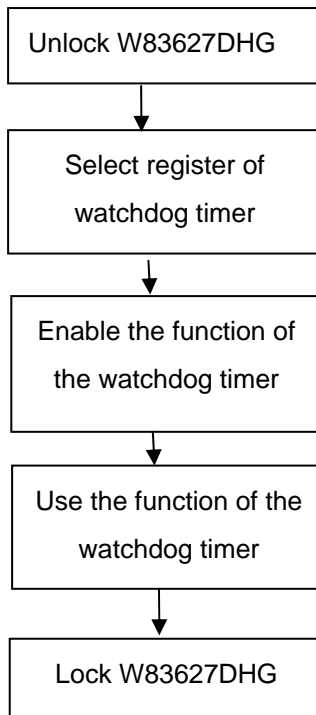
## A.1 Programming

---

COM-QM57 utilizes W83627DHG-P chipset as its watchdog timer controller.

Below are the procedures to complete its configuration and the AAEON initial watchdog timer program is also attached based on which you can develop customized program to fit your application.

### Configuring Sequence Description



There are three steps to complete the configuration setup:

- (1) Enter the W83627DHG config Mode
- (2) Modify the data of configuration registers



- (3) Exit the W83627DHG config Mode. Undesired result may occur if the config Mode is not exited normally.

### (1) Enter the W83627DHG config Mode

To enter the W83627DHG config Mode, two special I/O write operations are to be performed during Wait for Key state. To ensure the initial state of the key-check logic, it is necessary to perform two write operations to the Special Address port (2EH). The different enter keys are provided to select configuration ports (2Eh/2Fh) of the next step.

	Address Port	Data Port
87h,87h:	2Eh	2Fh

### (2) Modify the Data of the Registers

All configuration registers can be accessed after entering the config Mode. Before accessing a selected register, the content of Index 07h must be changed to the LDN to which the register belongs, except some Global registers.

### (3) Exit the W83627DHG config Mode

The exit key is provided to select configuration ports (2Eh/2Fh) of the next step.

	Address Port	Data Port
0aah:	2Eh	2Fh

### WatchDog Timer Register I (Index=F5h, Default=00h)

#### CRF5 (PLED and KBC P20 Control Mode Register)

**Bit 7-5** : select PLED mode

= 000 Power LED pin is driven high.

= 001 Power LED pin outputs 0.5Hz pulse with 50% duty cycle.

- = 010 Power LED pin is driven low.
- = 011 Power LED pin outputs 2Hz pulse with 50% duty cycle.
- = 100 Power LED pin outputs 1Hz pulse with 50% duty cycle.
- = 101 Power LED pin outputs 4Hz pulse with 50% duty cycle.
- = 110 Power LED pin outputs 0.25Hz pulse with 50% duty cycle.
- =111 Power LED pin outputs 0.25Hz pulse with 50% duty cycle..

**Bit 4** : WDTO# count mode is 1000 times faster.

- = 0 Disable.
- = 1 Enable.

**Bit 3** : select WDTO# count mode.

- = 0 second
- = 1 minute

**Bit 2** : Enable the rising edge of keyboard Reset (P20) to force Time-out event.

- = 0 Disable
- = 1 Enable

**Bit 1** : Disable / Enable the WDTO# output low pulse to the KBRST# pin (PIN60)

- = 0 Disable
- = 1 Enable

**Bit 0** : Reserved.

**WatchDog Timer Register II (Index=F6h, Default=00h)**

- Bit 7-0** = 0 x 00 Time-out Disable  
 = 0 x 01 Time-out occurs after 1 second/minute  
 = 0 x 02 Time-out occurs after 2 second/minutes  
 = 0 x 03 Time-out occurs after 3 second/minutes  
 .....  
 = 0 x FF Time-out occurs after 255 second/minutes

**WatchDog Timer Register III (Index=F7h, Default=00h)**

- Bit 7** : Mouse interrupt reset Enable or Disable  
 = 1 Watchdog Timer is reset upon a Mouse interrupt  
 = 0 Watchdog Timer is not affected by Mouse interrupt
- Bit 6** : Keyboard interrupt reset Enable or Disable  
 = 1 Watchdog Timer is reset upon a Keyboard interrupt  
 = 0 Watchdog Timer is not affected by Keyboard interrupt
- Bit 5** : Force Watchdog Timer Time-out. Write Only

- = 1 Force Watchdog Timer time-out event: this bit is self-clearing
- Bit 4** : Watchdog Timer Status. R/W

  - = 1 Watchdog Timer time-out occurred
  - = 0 Watchdog Timer counting
- Bit 3-0** : These bits select IRQ resource for Watchdog. Setting of 2 selects SMI.

## A.2 W83627DHG Watchdog Timer Initial Program

---

Example: Setting 10 sec. as Watchdog timeout interval

;/;;

Mov dx,2eh ;Enter W83627DHG config mode

Mov al,87h (out 87h to 2eh twice)

Out dx,al

Out dx,al

;/;;

Mov al,07h

Out dx,al

Inc dx

Mov al,08h ;Select Logical Device 8 (GPIO Port  
2)

Out dx,al

;/;;

Dec dx

Mov al,30h ;CR30 (GP20~GP27)

Out dx,al

Inc dx

Mov al,01h ;Activate GPIO2

Out dx,al

```

;/////////////////////////////////////////////////////////////////
Dec dx
Mov al,0f5h           ;CRF5 (PLED mode register)
Out dx,al
Inc dx
In al,dx
And al,not 08h       ;Set second as counting unit
Out dx,al
;/////////////////////////////////////////////////////////////////
Dec dx
Mov al,0f6h           ; CRF6
Out dx,al
Inc dx
Mov al,10             ;Set timeout interval as 10 sec.
Out dx,al
;/////////////////////////////////////////////////////////////////
Dec dx                 ;Exit W83627DHG config mode
Mov al,0aah           (out 0aah to 2eh once)
Out dx,al
;/////////////////////////////////////////////////////////////////

```

Appendix

























**B**

# I/O Information

## B.1 I/O Address Map

Input/output (IO)	
[00000000 - 0000000F]	Direct memory access controller
[00000000 - 00000CF7]	PCI bus
[00000010 - 0000001F]	Motherboard resources
[00000020 - 00000021]	Programmable interrupt controller
[00000022 - 0000003F]	Motherboard resources
[00000040 - 00000043]	System timer
[00000044 - 0000005F]	Motherboard resources
[00000060 - 00000060]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000061 - 00000061]	System speaker
[00000062 - 00000063]	Motherboard resources
[00000064 - 00000064]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000065 - 0000006F]	Motherboard resources
[00000070 - 00000071]	System CMOS/real time clock
[00000072 - 0000007F]	Motherboard resources
[00000080 - 00000080]	Motherboard resources
[00000081 - 00000083]	Direct memory access controller
[00000084 - 00000086]	Motherboard resources
[00000087 - 00000087]	Direct memory access controller
[00000088 - 00000088]	Motherboard resources
[00000089 - 0000008B]	Direct memory access controller
[0000008C - 0000008E]	Motherboard resources
[0000008F - 0000008F]	Direct memory access controller
[00000090 - 0000009F]	Motherboard resources
[000000A0 - 000000A1]	Programmable interrupt controller
[000000A2 - 000000BF]	Motherboard resources
[000000C0 - 000000DF]	Direct memory access controller
[000000E0 - 000000EF]	Motherboard resources
[000000F0 - 000000FF]	Numeric data processor
[00000274 - 00000277]	ISAPNP Read Data Port
[00000279 - 00000279]	ISAPNP Read Data Port
[00000295 - 000002A4]	Motherboard resources
[000002F8 - 000002FF]	Communications Port (COM2)
[00000378 - 0000037F]	Printer Port (LPT1)
[000003B0 - 000003BB]	Intel(R) HD Graphics
[000003C0 - 000003DF]	Intel(R) HD Graphics
[000003F0 - 000003F5]	Standard floppy disk controller
[000003F7 - 000003F7]	Standard floppy disk controller
[000003F8 - 000003FF]	Communications Port (COM1)
[00000400 - 0000047F]	System board
[000004D0 - 000004D1]	Motherboard resources
[00000500 - 0000057F]	System board
[00000A79 - 00000A79]	ISAPNP Read Data Port
[00000D00 - 0000FFFF]	PCI bus



	[00001180 - 0000119F]	System board
	[0000D000 - 0000D00F]	Standard Dual Channel PCI IDE Controller
	[0000D000 - 0000DFFF]	Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 8 - 3B50
	[0000D010 - 0000D013]	Standard Dual Channel PCI IDE Controller
	[0000D020 - 0000D027]	Standard Dual Channel PCI IDE Controller
	[0000D030 - 0000D033]	Standard Dual Channel PCI IDE Controller
	[0000D040 - 0000D047]	Standard Dual Channel PCI IDE Controller
	[0000E000 - 0000E01F]	Intel(R) 82583W Gigabit Network Connection
	[0000E000 - 0000EFFF]	Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 1 - 3B42
	[0000F000 - 0000F01F]	Intel(R) 5 Series/3400 Series Chipset Family SMBus Controller - 3B30
	[0000F020 - 0000F03F]	Intel(R) 82577LM Gigabit Network Connection
	[0000F040 - 0000F04F]	Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
	[0000F050 - 0000F05F]	Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
	[0000F060 - 0000F063]	Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
	[0000F070 - 0000F077]	Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
	[0000F080 - 0000F083]	Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
	[0000F090 - 0000F097]	Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
	[0000F0A0 - 0000F0AF]	Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
	[0000F0B0 - 0000F0BF]	Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
	[0000F0C0 - 0000F0C3]	Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
	[0000F0D0 - 0000F0D7]	Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
	[0000F0E0 - 0000F0E3]	Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
	[0000F0F0 - 0000F0F7]	Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
	[0000F100 - 0000F107]	Intel(R) HD Graphics

## B.2 Memory Address Map

Address Range	Device
[000A0000 - 000BFFFF]	Intel(R) HD Graphics
[000A0000 - 000BFFFF]	PCI bus
[D0000000 - DFFFFFFF]	Intel(R) HD Graphics
[D0000000 - FFFFFFFF]	PCI bus
[E0000000 - EFFFFFFF]	System board
[FE000000 - FE3FFFFF]	Intel(R) HD Graphics
[FE400000 - FE4FFFFF]	Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 8 - 3B50
[FE500000 - FE51FFFF]	Intel(R) 82583V Gigabit Network Connection
[FE500000 - FE5FFFFF]	Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 1 - 3B42
[FE520000 - FE523FFF]	Intel(R) 82583V Gigabit Network Connection
[FE600000 - FE61FFFF]	Intel(R) 82577LM Gigabit Network Connection
[FE620000 - FE623FFF]	Microsoft UAA Bus Driver for High Definition Audio
[FE624000 - FE624FFF]	Intel(R) Turbo Boost Technology Driver
[FE625000 - FE6250FF]	Intel(R) 5 Series/3400 Series Chipset Family SMBus Controller - 3B30
[FE626000 - FE6263FF]	Intel(R) 5 Series/3400 Series Chipset Family USB Enhanced Host Controller - 3B34
[FE627000 - FE6273FF]	Intel(R) 5 Series/3400 Series Chipset Family USB Enhanced Host Controller - 3B3C
[FE628000 - FE628FFF]	Intel(R) 82577LM Gigabit Network Connection
[FE629000 - FE62900F]	Intel(R) Management Engine Interface
[FEC00000 - FECFFFFFFF]	System board
[FED00000 - FED003FF]	High precision event timer
[FED08000 - FED08FFF]	System board
[FED14000 - FED19FFF]	System board
[FED1C000 - FED1FFFF]	System board
[FED20000 - FED3FFFF]	System board
[FED90000 - FED93FFF]	System board
[FEE00000 - FEE0FFFF]	System board
[FF000000 - FFFFFFFF]	System board

### B.3 IRQ Mapping Chart

Interrupt request (IRQ)	Device
(ISA) 0	System timer
(ISA) 1	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
(ISA) 3	Communications Port (COM2)
(ISA) 4	Communications Port (COM1)
(ISA) 6	Standard floppy disk controller
(ISA) 8	System CMOS/real time clock
(ISA) 9	Microsoft ACPI-Compliant System
(ISA) 12	Microsoft PS/2 Mouse
(ISA) 13	Numeric data processor
(PCI) 10	Intel(R) 5 Series/3400 Series Chipset Family SMBus Controller - 3B30
(PCI) 16	Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 2 - 3B44
(PCI) 16	Intel(R) 5 Series/3400 Series Chipset Family USB Enhanced Host Controller - 3B3C
(PCI) 16	Intel(R) 82583V Gigabit Network Connection
(PCI) 16	Intel(R) HD Graphics
(PCI) 16	Intel(R) Management Engine Interface
(PCI) 17	Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 1 - 3B42
(PCI) 17	Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 5 - 3B4A
(PCI) 18	Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 3 - 3B46
(PCI) 18	Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 7 - 3B4E
(PCI) 18	Intel(R) Turbo Boost Technology Driver
(PCI) 19	Intel(R) 5 Series/3400 Series Chipset Family 2 port Serial ATA Storage Controller - 3B2D
(PCI) 19	Intel(R) 5 Series/3400 Series Chipset Family 4 port Serial ATA Storage Controller - 3B2E
(PCI) 19	Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 4 - 3B48
(PCI) 19	Intel(R) 5 Series/3400 Series Chipset Family PCI Express Root Port 8 - 3B50
(PCI) 19	Standard Dual Channel PCI IDE Controller
(PCI) 20	Intel(R) 82577LM Gigabit Network Connection
(PCI) 22	Microsoft UAA Bus Driver for High Definition Audio
(PCI) 23	Intel(R) 5 Series/3400 Series Chipset Family USB Enhanced Host Controller - 3B34

### B.4 DMA Channel Assignments

Direct memory access (DMA)	Device
2	Standard floppy disk controller
4	Direct memory access controller

Appendix

C

# RAID & AHCI Settings

## C.1 Setting RAID

---

OS installation to setup RAID Mode

Step 1: Copy the files below from “**Driver CD -> Raid Driver -> F6 Floppy - x86**” to Disk

 F6Readme  
文字文件  
8 KB

 iaAHCI  
安裝資訊  
9 KB

 iaStor  
安裝資訊  
8 KB

 license  
文字文件  
5 KB

 TXTSETUP.OEM  
OEM 檔案  
6 KB

 iaAHCI  
安全性目錄  
9 KB

 iaStor  
安全性目錄  
8 KB

 iaStor  
系統檔案  
423 KB

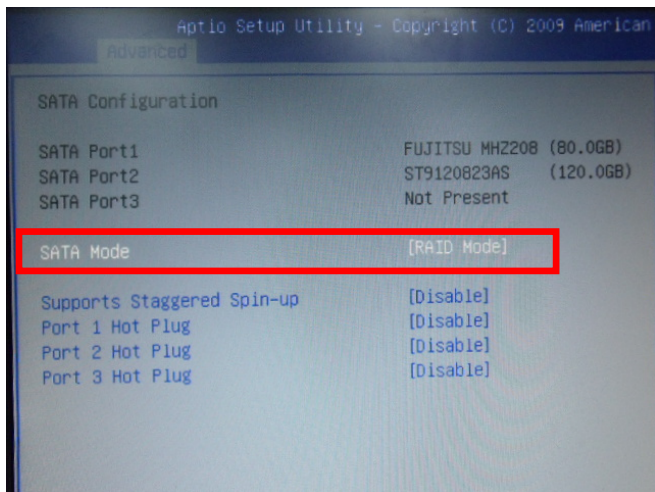
 readme  
文字文件  
78 KB

Step 2: Connect the USB Floppy (disk with RAID files) to the board



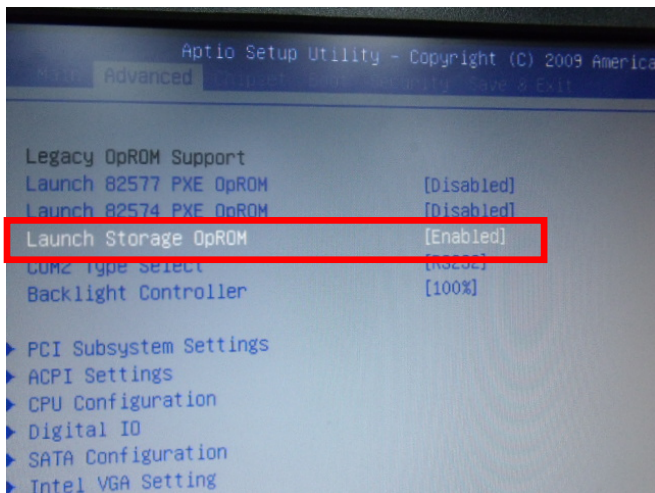
Step 3: The setting procedures "In BIOS Setup Menu"

**A: Advanced -> SATA Configuration -> SATA Mode -> RAID Mode**



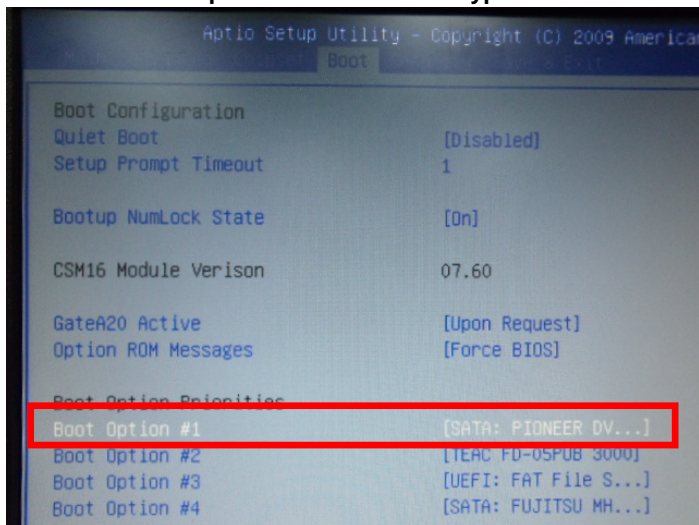
Step 4: The setting procedures "In BIOS Setup Menu"

**B: Advanced -> Launch Storage OpROM -> Enabled**



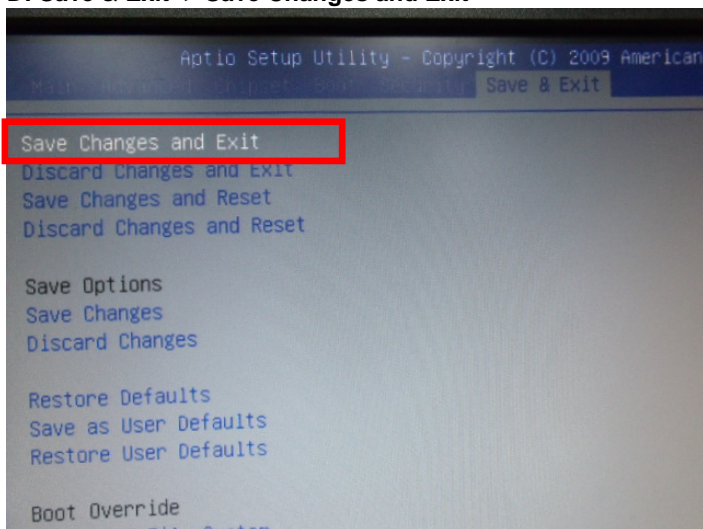
Step 5: The setting procedures "In BIOS Setup Menu"

**C: Boot -> Boot Option #1 -> DVD-ROM Type**

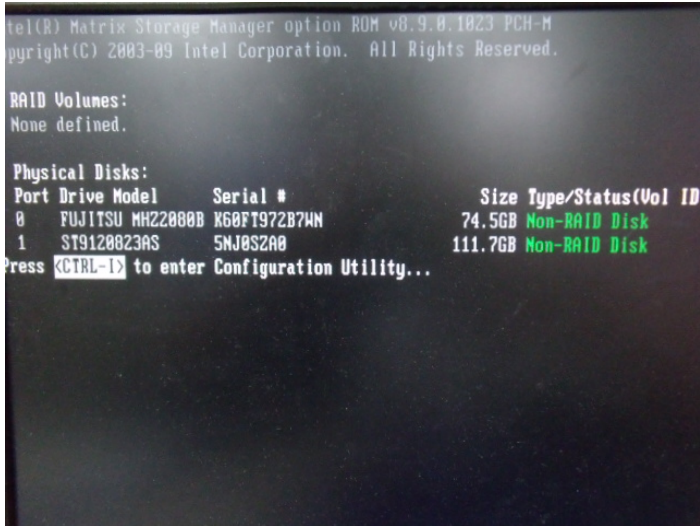


Step 6: The setting procedures "In BIOS Setup Menu"

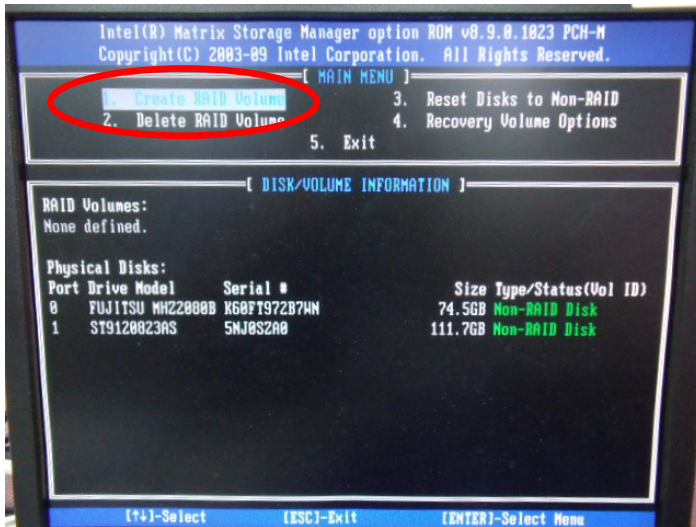
**D: Save & Exit -> Save Changes and Exit**





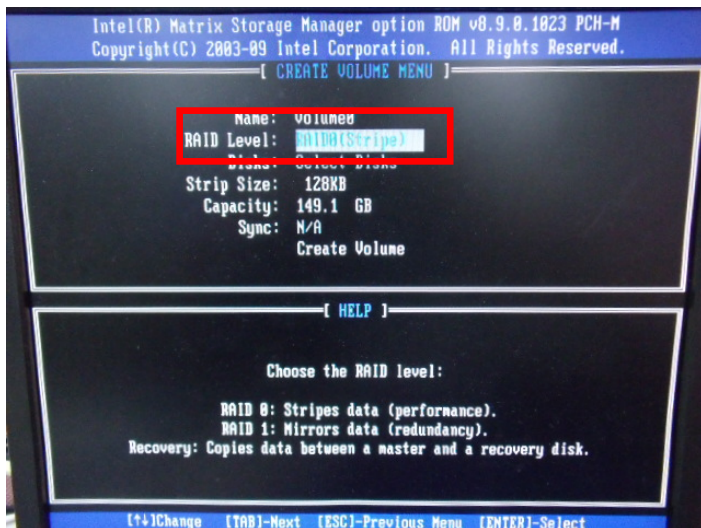
Step 7: Press **Ctrl-I** to enter **MAIN MENU**

## Step 8: Choose "1.Create RAID Volume"

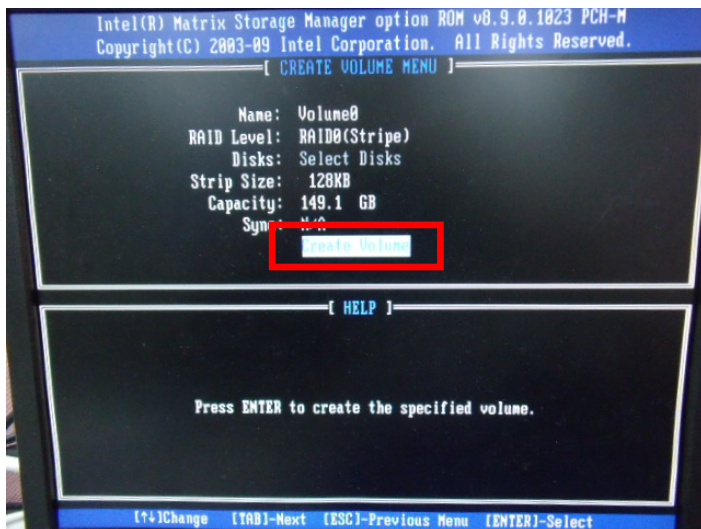




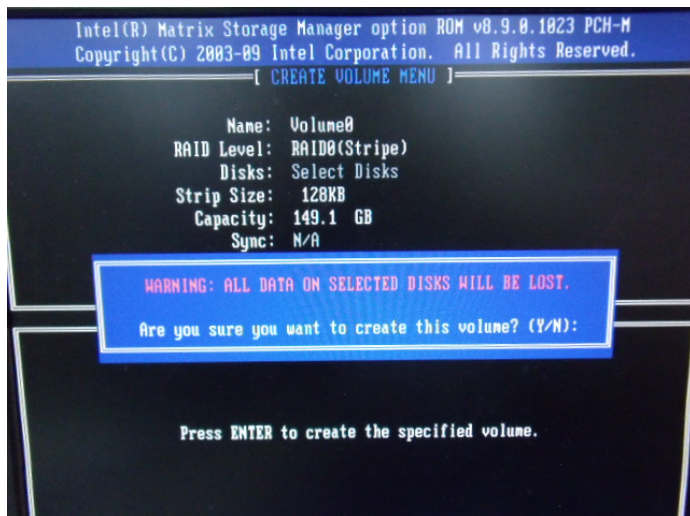
Step 9: RAID Level -> RAID0(Stripe)



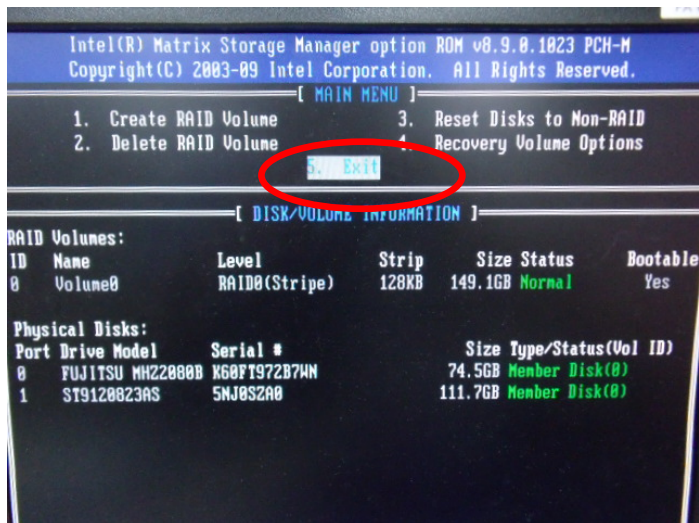
Step 10: Choose "Create Volume"



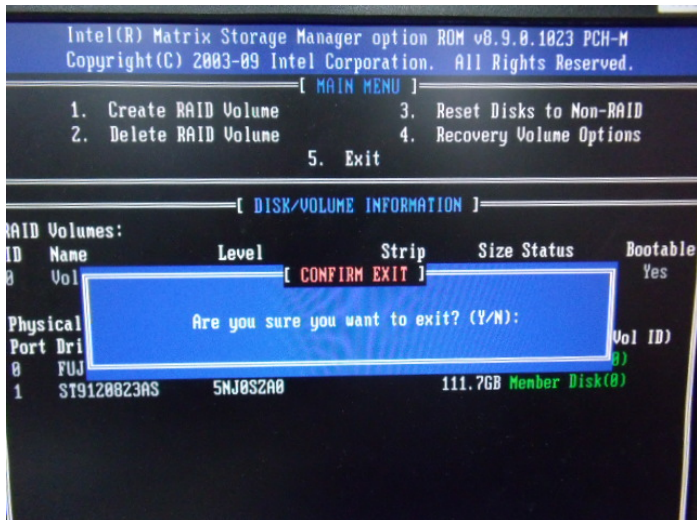
Step 11: Choose “Y”



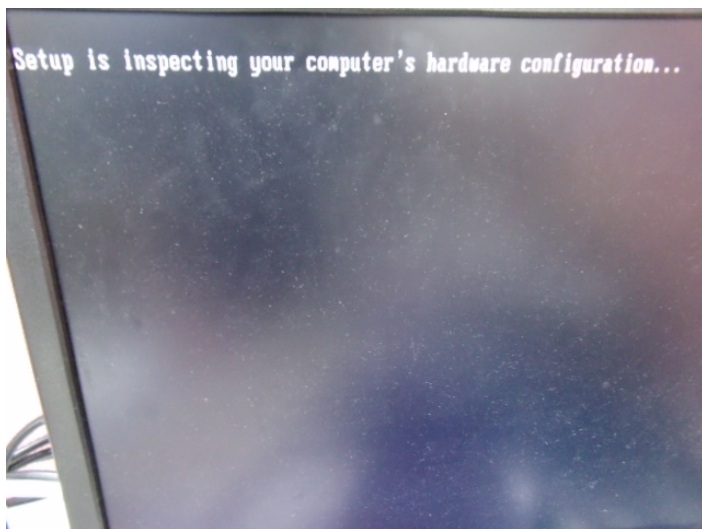
Step 12: Choose “5. Exit”



Step 13: Choose “Y”



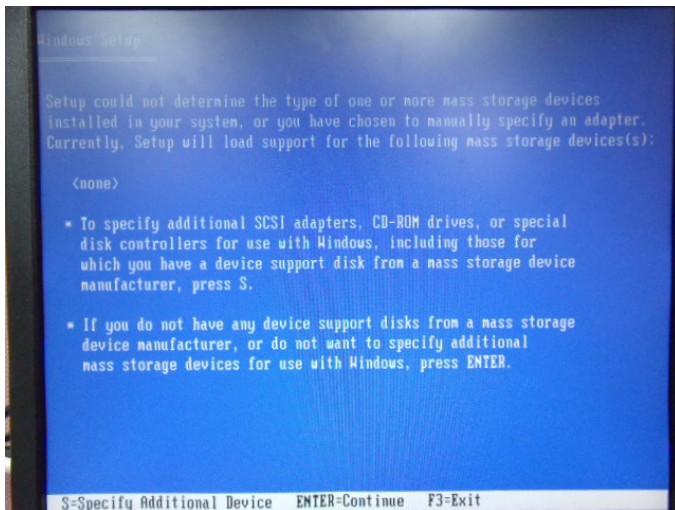
Step 14: Setup OS



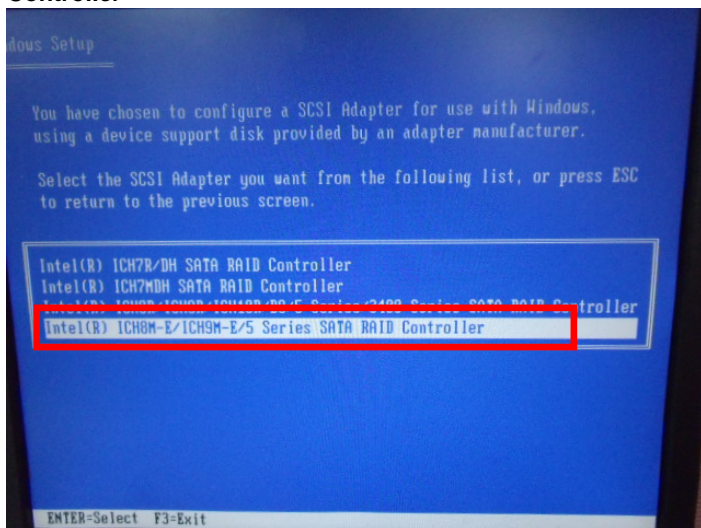
Step 15: Press “F6”



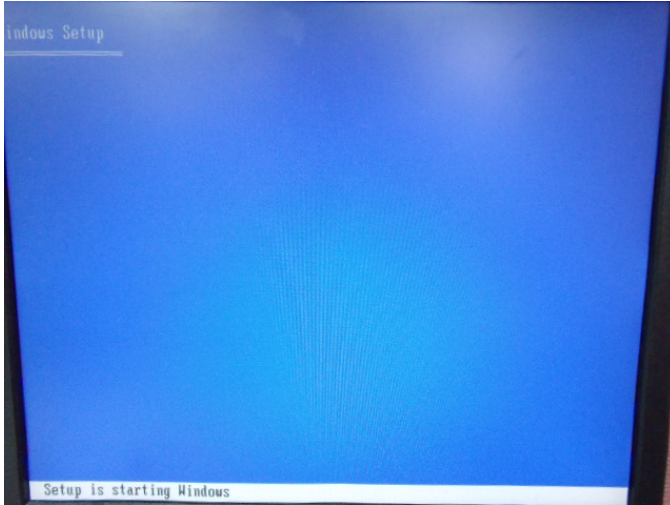
Step 16: Choose “S”





**Step 17: Choose “Intel(R) ICH8M-E/ICH9M-E/5 Series SATA RAID Controller”****Step 18: It will show the model number you select and then press “ENTER”**

Step 19: Setup is starting Windows



## C.2 Setting AHCI

---

OS installation to setup AHCI Mode

Step 1: Copy the files below from “**Driver CD -> Raid Driver -> F6 Floppy - x86**” to Disk

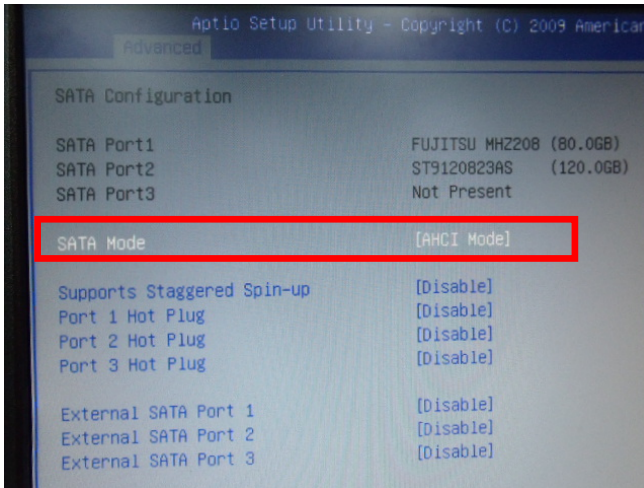
 F6Readme 文字文件 8 KB	 iaAHCI 安全性目錄 9 KB
 iaAHCI 安裝資訊 9 KB	 iaStor 安全性目錄 8 KB
 iaStor 安裝資訊 8 KB	 iaStor 系統檔案 423 KB
 license 文字文件 5 KB	 readme 文字文件 78 KB
 TXTSETUP.OEM OEM 檔案 6 KB	

Step 2: Connect the USB Floppy (disk with RAID files) to the board



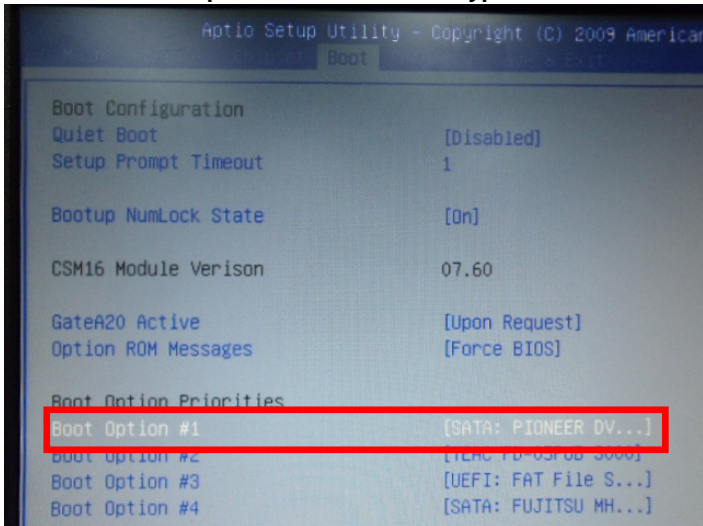
Step 3: The setting procedures “In BIOS Setup Menu”

**A: Advanced -> SATA Configuration -> SATA Configuration -> SATA Mode -> AHCI Mode**



Step 4: The setting procedures “In BIOS Setup Menu”

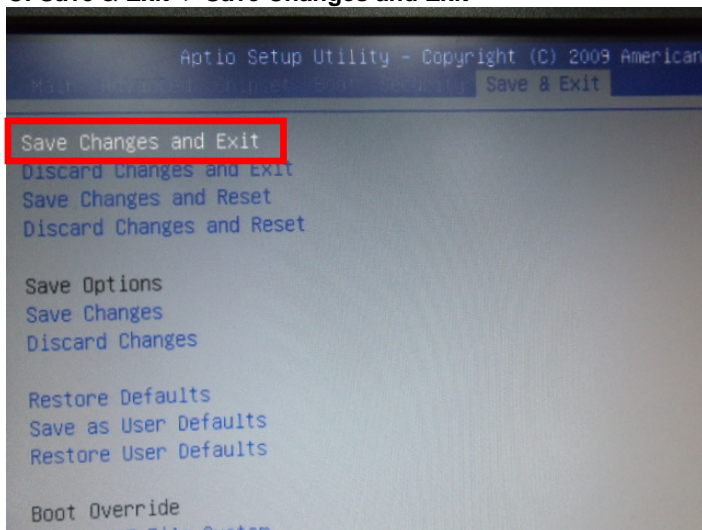
**B: Boot -> Boot Option #1 -> DVD-ROM Type**



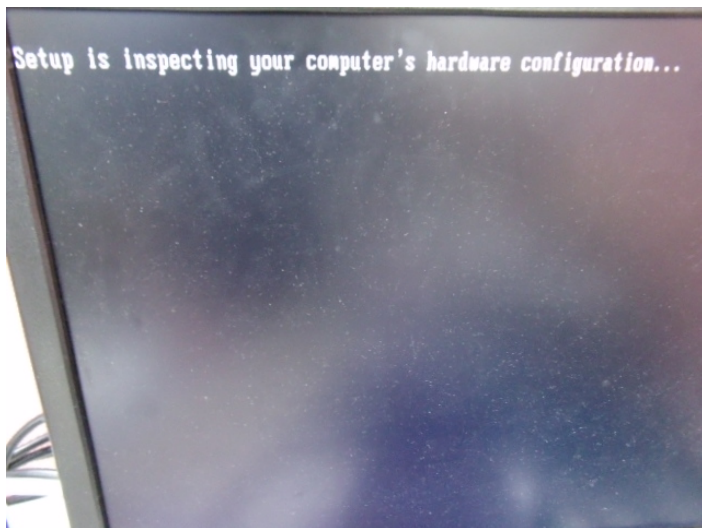


Step 5: The setting procedures "In BIOS Setup Menu"

**C: Save & Exit -> Save Changes and Exit**



Step 6: Setup OS



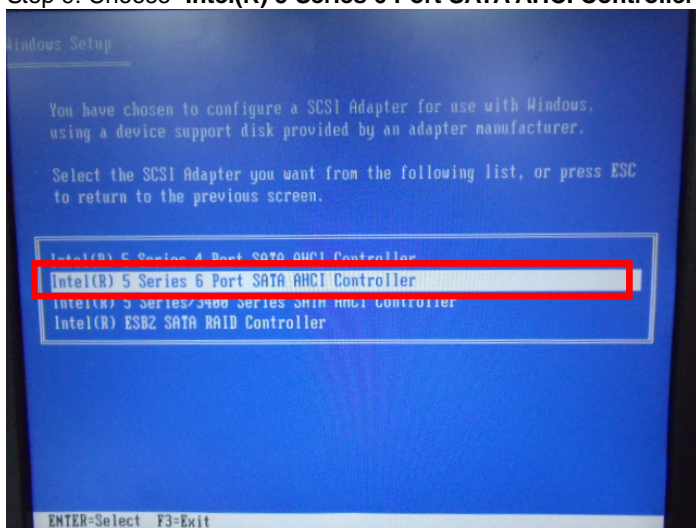
## Step 7: Press "F6"



## Step 8: Choose "S"



## Step 9: Choose "Intel(R) 5 Series 6 Port SATA AHCI Controller"



## Step 10: It will show the model number you select and then press "ENTER"



Step 11: Setup is loading files

