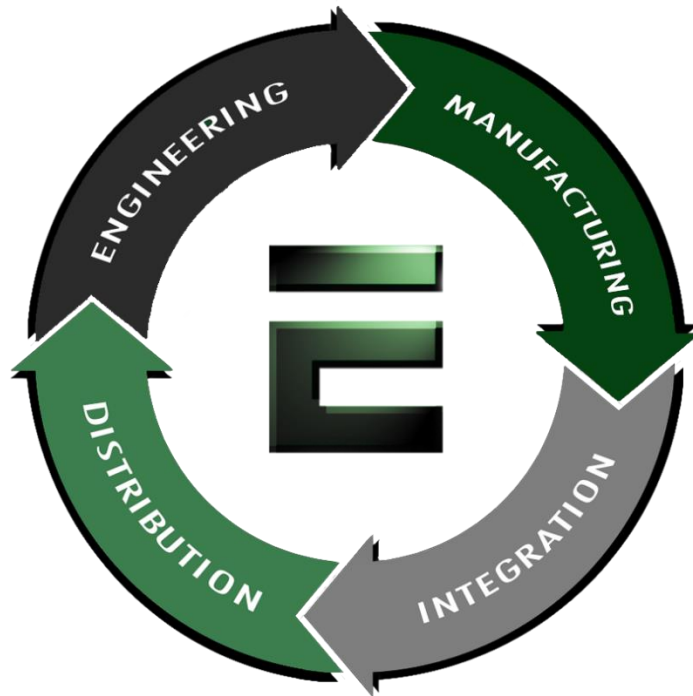


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**PCM-LN05 Rev.B**

Intel® Atom™N455/D525 Processors

Intel® 82567V & 82583V

for 10/100/1000Mbps

2 SATA 3.0 Gb/s, 1 CompactFlash™

6 COM, 7 USB2.0, Digital I/O

1 Mini Card/ SMBus/ LPC

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## Packing List

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

- CD-ROM for manual (in PDF format) and drivers
- PCM-LN05 Rev.B with Active Cooler (D525 Version) or with Passive Cooler (N455 Version)

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**

---

AAEON, a leading embedded boards manufacturer, is pleased to announce a new 3.5" SubCompact Board—PCM-LN05 Rev.B. The PCM-LN05 Rev.B is a cutting-edge product that provides high performance and low power consumption in the embedded market. PCM-LN05 Rev.B adopts the latest Intel® Atom processors and the system memory is deployed with SODIMM DDR3 up to 4 GB (D525 is up to 4 GB, N455 is up to 2 GB). In addition, Intel® 82567V & 82583V supports two 10/100/100Base-TX that allows faster network connections. This model applies one Mini Card and one LPC Bus expansions. Moreover, two SATA 3.0 Gb/s (optional RAID 0 &1) and one Type2 CompactFlash™ storages are configured on the PCM-LN05 Rev.B. In addition to the diverse storages, PCM-LN05 Rev.B also equips seven USB2.0, six COM, one parallel, and one keyboard/mouse ports for flexible I/O expansions. There are no more worries about installing many necessary devices to complete the functions of your system.

The display of PCM-LN05 Rev.B supports CRT/LCD simultaneous/dual view displays and 18/24-bit single channel LVDS. This brand new SubCompact board is developed to cater to the requirements of Automation, Medical, ticket machine, transportation, gaming, KIOSK, and POS/POI applications.

## **1.2 Features**

---

- Intel® Atom™ N455/D525 Processors Up To 1.8 GHz
- Intel® ICH8M
- DDR3 667/800 SODIMM, Max. 4 GB for D525; Max. 2 GB for N455
- Gigabit Ethernet x 2
- CRT, 18/24-bit Single Channel LVDS LCD
- 2CH HD Audio
- SATA 3.0Gb/s x 2 (Optional RAID 0 & 1), CompactFlash™ x 1
- USB 2.0 x 7, COM x 6, Parallel x 1, 8-bit Digital I/O
- Onboard 4/5/8-wire Resistive Touch Screen Controller
- Mini Card x 1
- +12V or +5V (Optional) Operation
- Onboard Trusted Platform Module (Optional)

## 1.3 Specifications

---

### System

- Processor Intel® Atom™ N455/D525 1.8GHz Processors
- System Memory 204-pin DDR3 667/800 SODIMM x 1, Max. 4 GB for Intel® Atom™ D525; Max. 2 GB for Intel® Atom™ N455
- Chipset Intel® ICH8M
- I/O Chipset Nuvoton W83627DHG-P, Fintek F81216DG
- Ethernet Intel® 82567V & 82583V, 10/100/1000Base-TX, RJ-45 x 2
- BIOS AMI Plug & Play SPI BIOS – 2MB Flash
- Wake On LAN Yes
- Watchdog Timer Generates a time-out system reset
- H/W Monitor Supports power supply voltages and temperature monitoring
- Chipset
- Expansion Interface Mini Card x 1, LPC Bus
- Trusted Platform Infineon SLB 9635 TT 1.2 (Optional) Module (TPM)
- Battery Lithium battery
- Power Requirement +12V or +5V (Optional), AT/ATX

- Board Size 5.75"(L) x 4"(W) (146mm x 101.6mm)
- Gross Weight 0.88 lb (0.4 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 simultaneous/dual view displays**

- Chipset Intel® N455/D525 integrated
- Memory Shared system memory up to 224 MB/ DVMT4.0
- Resolution Up to 1920 x 1440 for CRT (D525)  
Up to 1280x1024 for CRT (N455)  
Up to 1366x768 or 1280 x 800 for LCD
- LCD Interface 18/24-bit single channel LVDS

**I/O**

- Storage SATA 3.0 Gb/s x 2,  
Type2 CompactFlash™ x 1
- Serial Port RS-232 x 5, RS-232/422/485  
(auto flow) x 1
- Parallel Port SPP/EPP/ECP x 1
- USB Port USB2.0 x 7

- PS/2 Port Keyboard x 1, Mouse x 1
- Digital I/O Supports 8-bit (Programmable)
- Audio Line-in, Line-out, Mic-in
- Touch Screen Supports 4/5/8-wire resistive touch screen

Chapter

2

**Quick  
Installation  
Guide**

## 2.1 Safety Precautions

---

**Warning!**

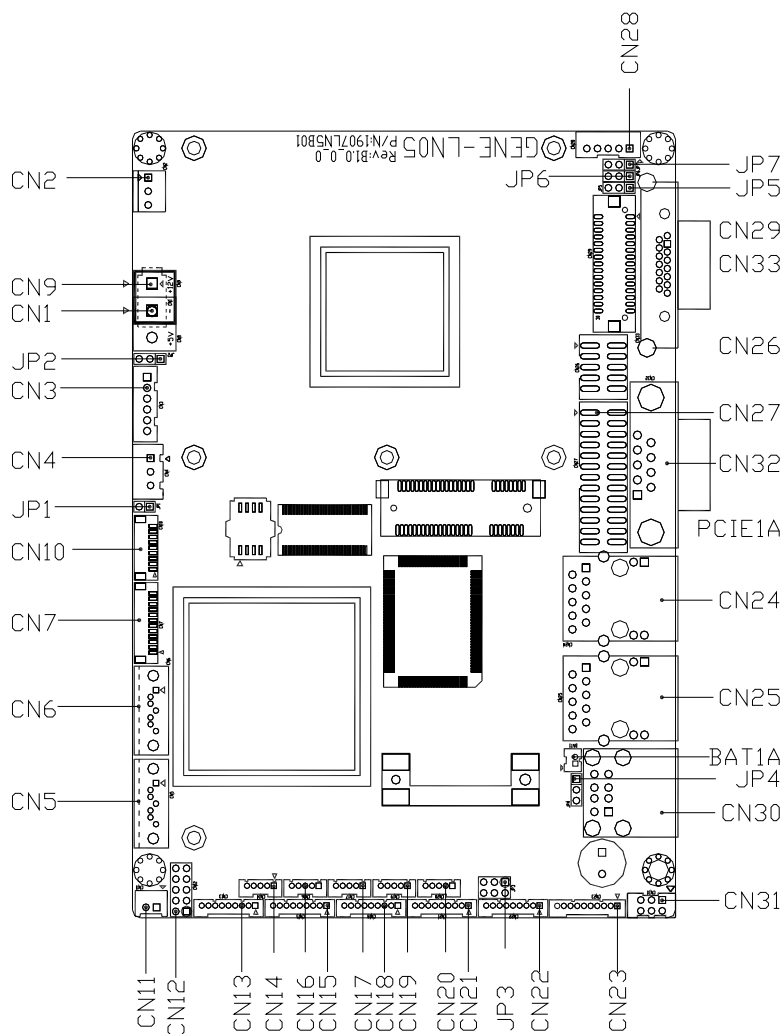
*Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.*

**Caution!**

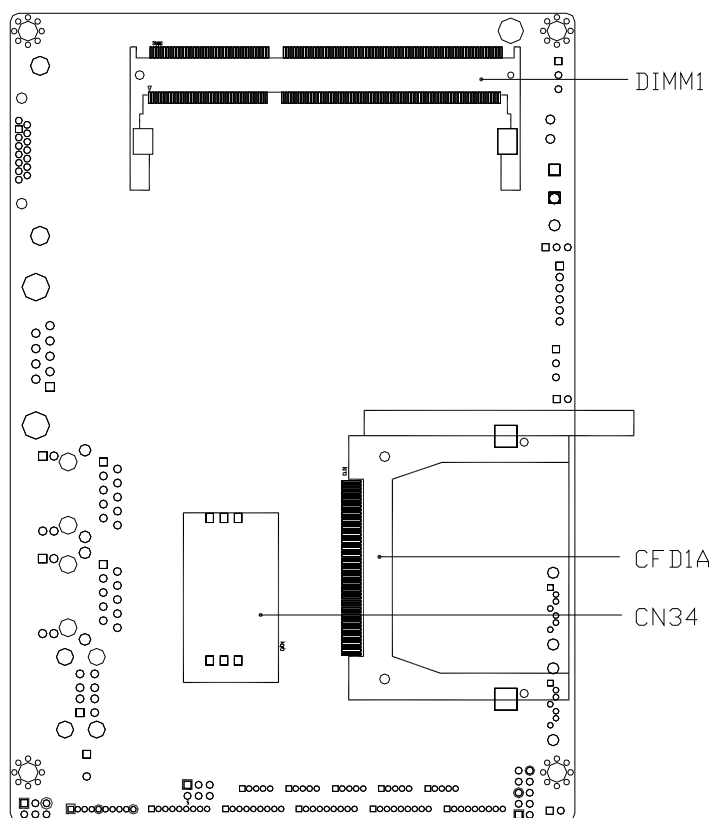
*Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not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

## 2.2 Location of Connectors and Jumpers

### Component Side

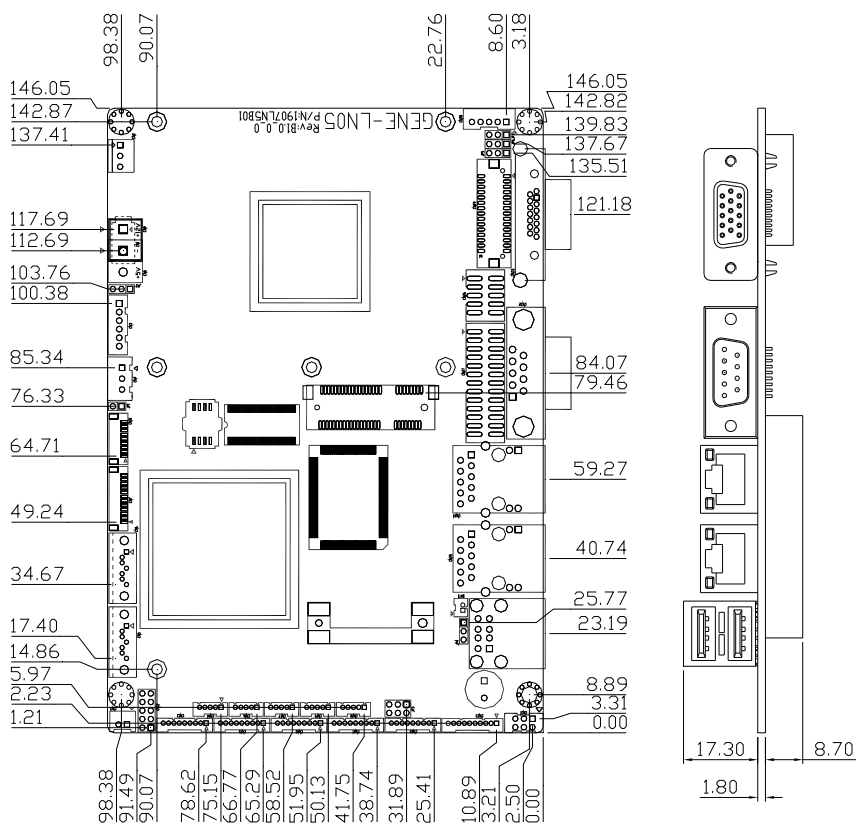


## Solder Side

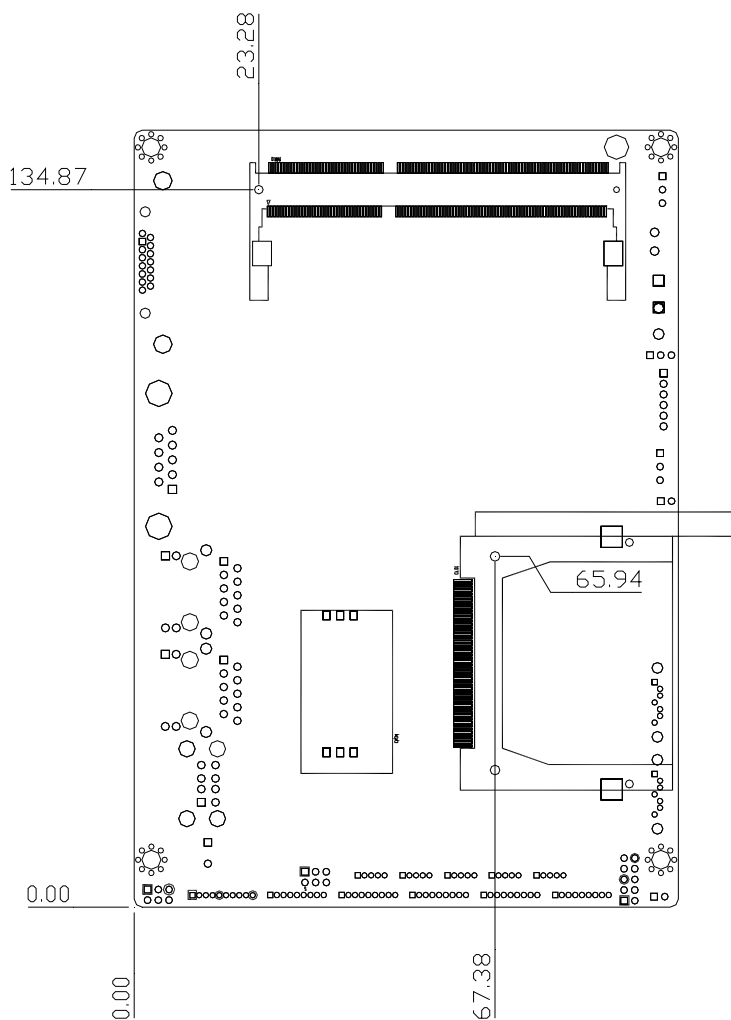


## 2.3 Mechanical Drawing

### Component Side



## Solder Side



## 2.4 List of Jumpers

---

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

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

| Label | Function                                |
|-------|-----------------------------------------|
| JP1   | Touch Screen 4/5/8-wires Mode Selection |
| JP2   | Auto Power Button Selection             |
| JP3   | COM2 RI/+5/+12V Selection               |
| JP4   | Clear CMOS                              |
| JP5   | LVDS Backlight Bias/PWM Mode Selection  |
| JP6   | LVDS Operating Voltage Selection        |
| JP7   | LVDS Inverter Voltage Selection         |

## 2.5 List of Connectors

---

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:

| Label | Function                                                   |
|-------|------------------------------------------------------------|
| CN1   | 2-Pin ATX Power Connector (Optional)                       |
| CN2   | CPU FAN                                                    |
| CN3   | +5VSB Output w/ SMBus                                      |
| CN4   | External +5VSB Input                                       |
| CN5   | SATA Port #2                                               |
| CN6   | SATA Port #1                                               |
| CN7   | LPC Expansion I/F                                          |
| CN8   | External +5V Input (depends on power input configuration)  |
| CN9   | External +12V Input (depends on power input configuration) |
| CN10  | Touch Screen                                               |
| CN11  | +5V Output for SATA HDD using                              |
| CN12  | Front Panel                                                |
| CN13  | COM Port #6                                                |
| CN14  | USB Port #7                                                |
| CN15  | COM Port #5                                                |
| CN16  | USB Port #6                                                |
| CN17  | USB Port #5                                                |
| CN18  | COM Port #4                                                |
| CN19  | USB Port #4                                                |
| CN20  | USB Port #3                                                |

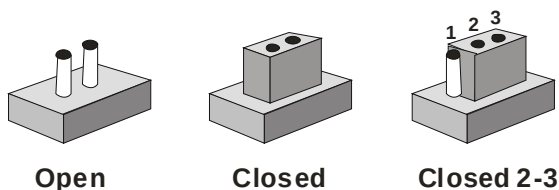
|       |                                     |
|-------|-------------------------------------|
| CN21  | COM Port #3                         |
| CN22  | COM Port #2                         |
| CN23  | Audio Line-In/Out and MIC Connector |
| CN24  | RJ-45 Ethernet #2                   |
| CN25  | RJ-45 Ethernet #1                   |
| CN26  | Digital I/O                         |
| CN27  | Parallel Port                       |
| CN28  | LVDS Inverter Control               |
| CN29  | LVDS Output                         |
| CN30  | USB Port #1 and #2                  |
| CN31  | PS/2 Keyboard & Mouse               |
| CN32  | COM Port #1                         |
| CN33  | Analog CRT Display                  |
| CN34  | SIM Card Socket                     |
| CFD1  | Compact Flash Disk                  |
| PCIE1 | Mini-Card Slot #1                   |
| DIMM1 | DDR3 SODIMM Slot                    |

## 2.6 Setting Jumpers

---

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.

## 2.7 Touch Screen 4/5/8-wire Mode Selection (JP1)

---

| JP1        | Function           |
|------------|--------------------|
| 1-2 Closed | 4/8-wire (Default) |
| 1-2 Open   | 5-wire             |

## 2.8 Auto Power Button Selection (JP2)

---

| JP2 | Function         |
|-----|------------------|
| 1-2 | Enable (Default) |
| 2-3 | Disable          |

## 2.9 COM2 RI/+5V/+12V Selection (JP3)

---

| JP3 | Function     |
|-----|--------------|
| 1-2 | +12V         |
| 3-4 | +5V          |
| 5-6 | RI (Default) |

## 2.10 Clear CMOS (JP4)

---

| JP4 | Function         |
|-----|------------------|
| 1-2 | Normal (Default) |
| 2-3 | Clear CMOS       |

## 2.11 LVDS Backlight Bias/PWM Mode Selection (JP5)

---

| JP5 | Function       |
|-----|----------------|
| 1-2 | Bias (Default) |
| 2-3 | PWM Control    |

## 2.12 LVDS Operating Voltage Selection (JP6)

| JP6 | Function        |
|-----|-----------------|
| 1-2 | +5V             |
| 2-3 | +3.3V (Default) |

## 2.13 LVDS Inverter Voltage Selection (JP7)

| JP7 | Function      |
|-----|---------------|
| 1-2 | +12V          |
| 2-3 | +5V (Default) |

## 2.14 2-Pin ATX Power Connector (CN1) (Optional)

| Pin | Signal |
|-----|--------|
| 1   | +12V   |
| 2   | Ground |

## 2.15 CPU FAN Connector (CN2)

| Pin | Signal                |
|-----|-----------------------|
| 1   | Ground                |
| 2   | +5V (Optional) / +12V |
| 3   | FAN Sense             |

## 2.16 +5VSB Output With SMBUS (CN3)

| Pin | Signal  |
|-----|---------|
| 1   | SMBDATA |
| 2   | Ground  |
| 3   | SMBCLK  |
| 4   | Ground  |

---

|   |                  |
|---|------------------|
| 5 | PSON#            |
| 6 | +5 Volt. Standby |

---

### 2.17 External +5VSB Input (CN4)

---

| Pin | Signal      |
|-----|-------------|
| 1   | PSON#       |
| 2   | Ground      |
| 3   | +5V Standby |

---

### 2.18 SATA Port # 2 (CN5)

---

| Pin | Signal |
|-----|--------|
| 1   | Ground |
| 2   | TX1+   |
| 3   | TX1-   |
| 4   | Ground |
| 5   | RX1-   |
| 6   | RX1+   |
| 7   | Ground |

---

### 2.19 SATA Port # 1 (CN6)

---

| Pin | Signal |
|-----|--------|
| 1   | Ground |
| 2   | TX0+   |
| 3   | TX0-   |
| 4   | Ground |
| 5   | RX0-   |
| 6   | RX0+   |
| 7   | Ground |

---

## 2.20 LPC Expansion I/F (CN7)

---

| Pin | Signal     |
|-----|------------|
| 1   | LAD0       |
| 2   | LAD1       |
| 3   | LAD2       |
| 4   | LAD3       |
| 5   | +3.3 Volt. |
| 6   | LFRAME#    |
| 7   | LRESET#    |
| 8   | Ground     |
| 9   | LPC_CLK    |
| 10  | LDRQ#0     |
| 11  | LDRQ#1     |
| 12  | SERIRQ     |

## 2.21 External +5V Input –depends on the power input configuration (CN8)

---

### DC Terminal

| Pin | Signal |
|-----|--------|
| 1   | Ground |
| 2   | +5V    |

## 2.22 External +12V Input-depends on the power input configuration (CN9)

---

### DC Terminal

| Pin | Signal |
|-----|--------|
| 1   | +12V   |
| 2   | Ground |

## 2.23 Touch Screen Connector (CN10)

| Pin | 8-wire        | 5-wire | 4-wire |
|-----|---------------|--------|--------|
| 1   | Ground        | Ground | Ground |
| 2   | Top Excite    | UL(Y)  | Top    |
| 3   | Bottom Excite | UR(H)  | Bottom |
| 4   | Left Excite   | LL(L)  | Left   |
| 5   | Right Excite  | LR(X)  | Right  |
| 6   | Top Sense     | SENSE  | N/C    |
| 7   | Bottom Sense  | N/C    | N/C    |
| 8   | Left Sense    | N/C    | N/C    |
| 9   | Right Sense   | N/C    | N/C    |

## 2.24 +5V Output For SATA HDD (CN11)

| Pin | Signal      |
|-----|-------------|
| 1   | +5V (800mA) |
| 2   | Ground      |

## 2.25 Front Panel (CN12)

| Pin          | Signal              |
|--------------|---------------------|
| (-) 1-2 (+)  | ATX Power-on Button |
| (-) 3-4 (+)  | HDD Active LED      |
| (-) 5-6 (+)  | External Speaker    |
| (-) 7-8 (+)  | Power LED           |
| (-) 9-10 (+) | System Reset Button |

## 2.26 COM Port #6 (CN13)

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1   | DCDF   | 2   | DSRF   |

|   |        |    |      |
|---|--------|----|------|
| 3 | RXF    | 4  | RTSF |
| 5 | TXF    | 6  | CTSF |
| 7 | DTRF   | 8  | RIF  |
| 9 | Ground | 10 | N/C  |

### 2.27 USB Port #7 (CN14)

| Pin | Signal      |
|-----|-------------|
| 1   | +5V Standby |
| 2   | Data6-      |
| 3   | Data6+      |
| 4   | Ground      |
| 5   | Ground      |

### 2.28 COM Port #5 (CN15)

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1   | DCDE   | 2   | DSRE   |
| 3   | RXE    | 4   | RTSE   |
| 5   | TXE    | 6   | CTSE   |
| 7   | DTRE   | 8   | RIE    |
| 9   | Ground | 10  | N/C    |

### 2.29 USB Port #6 (CN16)

| Pin | Signal      |
|-----|-------------|
| 1   | +5V Standby |
| 2   | Data5-      |
| 3   | Data5+      |
| 4   | Ground      |
| 5   | Ground      |

### 2.30 USB Port #5 (CN17)

| Pin | Signal      |
|-----|-------------|
| 1   | +5V Standby |
| 2   | Data4-      |
| 3   | Data4+      |
| 4   | Ground      |
| 5   | Ground      |

### 2.31 COM Port #4 (CN18)

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1   | DCDD   | 2   | DSRD   |
| 3   | RXD    | 4   | RTSD   |
| 5   | TXD    | 6   | CTSD   |
| 7   | DTRD   | 8   | RID    |
| 9   | Ground | 10  | N/C    |

### 2.32 USB Port #4 (CN19)

| Pin | Signal      |
|-----|-------------|
| 1   | +5V Standby |
| 2   | Data3-      |
| 3   | Data3+      |
| 4   | Ground      |
| 5   | Ground      |

### 2.33 USB Port #3 (CN20)

| Pin | Signal      |
|-----|-------------|
| 1   | +5V Standby |
| 2   | Data2-      |

|   |        |
|---|--------|
| 3 | Data2+ |
| 4 | Ground |
| 5 | Ground |

### 2.34 COM Port #3 (CN21)

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1   | DCDC   | 2   | DSRC   |
| 3   | RXC    | 4   | RTSC   |
| 5   | TXC    | 6   | CTSC   |
| 7   | DTRC   | 8   | RIC    |
| 9   | Ground | 10  | N/C    |

### 2.35 COM Port #2 (CN22)

#### RS-232 Mode

| Pin | Signal | Pin | Signal             |
|-----|--------|-----|--------------------|
| 1   | DCDB   | 2   | DSRB               |
| 3   | RXB    | 4   | RTSB               |
| 5   | TXB    | 6   | CTSB               |
| 7   | DTRB   | 8   | RIB / +5V / (+12V) |
| 9   | Ground | 10  | N/C                |

#### RS-422 Mode

| Pin | Signal | Pin | Signal             |
|-----|--------|-----|--------------------|
| 1   | TXD-   | 2   | N/C                |
| 3   | RXD+   | 4   | N/C                |
| 5   | TXD+   | 6   | N/C                |
| 7   | RXD-   | 8   | N/C / +5V / (+12V) |
| 9   | Ground | 10  | N/C                |

**RS-485 Mode**

| Pin | Signal | Pin | Signal            |
|-----|--------|-----|-------------------|
| 1   | TXD-   | 2   | N/C               |
| 3   | N/C    | 4   | N/C               |
| 5   | TXD+   | 6   | N/C               |
| 7   | N/C    | 8   | N/C / +5V/ (+12V) |
| 9   | Ground | 10  | N/C               |

**2.36 Audio Line-In/Out and MIC Connector (CN23)**

| Pin | Signal     |
|-----|------------|
| 1   | MIC_L      |
| 2   | MIC_R      |
| 3   | Ground     |
| 4   | Line IN_L  |
| 5   | Line IN_R  |
| 6   | Ground     |
| 7   | Line OUT_L |
| 8   | Ground     |
| 9   | Line OUT_R |
| 10  | +5V        |

**2.37 RJ-45 Ethernet #2 (CN24)**

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| R1  | MDIO0+ | R2  | MDIO0- |
| R3  | MDIO1+ | R4  | MDIO1- |
| R5  | TCD0   | R6  | TCD1   |
| R7  | MDIO2+ | R8  | MDIO2- |
| R9  | MDIO3+ | R10 | MDIO3- |

|    |            |    |           |
|----|------------|----|-----------|
| L1 | SPD100_LED | L2 | SPD1K_LED |
| L3 | ACT_LED    | L4 | +3.3V     |

## 2.38 RJ-45 Ethernet #1 (CN25)

| Pin | Signal      | Pin | Signal      |
|-----|-------------|-----|-------------|
| R1  | GPHY_MDIO0+ | R2  | GPHY_MDIO0- |
| R3  | GPHY_MDIO1+ | R4  | GPHY_MDIO1- |
| R5  | TCD0        | R6  | TCD1        |
| R7  | GPHY_MDIO2+ | R8  | GPHY_MDIO2- |
| R9  | GPHY_MDIO3+ | R10 | GPHY_MDIO3- |
| L1  | SPD100_LED  | L2  | SPD1K_LED   |
| L3  | ACT_LED     | L4  | +3.3V       |

## 2.39 Digital I/O Connector (CN26)

**Note: The max. rating of Pin 1 ~ Pin 8 is 3.3V@8mA**

**The max. rating of Pin 9 is 3.3V@0.5A**

This connector offers 4-pair of digital I/O functions .

BIOS using the I2C Bus to read/write internal DIO registers and the Serial Bus address is 0x6E.

The pin definitions are illustrated below:

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1   | Port 1 | 2   | Port 2 |
| 3   | Port 3 | 4   | Port 4 |
| 5   | Port 5 | 6   | Port 6 |
| 7   | Port 7 | 8   | Port 8 |
| 9   | +3.3V  | 10  | Ground |

| BIOS Setting<br>(I2C address) | Connector<br>Definition | Address(Register) |           | F75111 GPIO Setting |
|-------------------------------|-------------------------|-------------------|-----------|---------------------|
|                               |                         | Output            | Input     |                     |
| Port 1 @6Eh                   | Pin 1                   | 21h/Bit 0         | 22h/Bit 0 | U69 Pin 6 (GPIO 20) |
| Port 2 @6Eh                   | Pin 2                   | 21h/Bit 1         | 22h/Bit 1 | U69 Pin 7 (GPIO 21) |
| Port 3 @6Eh                   | Pin 3                   | 21h/Bit 2         | 22h/Bit 2 | U69 Pin 8 (GPIO 22) |
| Port 4 @6Eh                   | Pin 4                   | 21h/Bit 3         | 22h/Bit 3 | U69 Pin 24(GPIO 23) |
| Port 5 @6Eh                   | Pin 5                   | 21h/Bit 4         | 22h/Bit 4 | U69 Pin 23(GPIO 24) |
| Port 6 @6Eh                   | Pin 6                   | 21h/Bit 5         | 22h/Bit 5 | U69 Pin 22(GPIO 25) |
| Port 7 @6Eh                   | Pin 7                   | 21h/Bit 6         | 22h/Bit 6 | U69 Pin 21(GPIO 26) |
| Port 8 @6Eh                   | Pin 8                   | 21h/Bit 7         | 22h/Bit 7 | U69 Pin 20(GPIO 27) |

## 2.40 Parallel Port (CN27)

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1   | STB    | 2   | AFD#   |
| 3   | D0     | 4   | ERROR# |
| 5   | D1     | 6   | PINIT# |
| 7   | D2     | 8   | SLIN#  |
| 9   | D3     | 10  | Ground |
| 11  | D4     | 12  | Ground |
| 13  | D5     | 14  | Ground |
| 15  | D6     | 16  | Ground |
| 17  | D7     | 18  | Ground |
| 19  | ACK#   | 20  | Ground |
| 21  | BUSY   | 22  | Ground |
| 23  | PE     | 24  | Ground |
| 25  | SLCT   | 26  | N/C    |

## 2.41 LVDS Inverter Connector (CN28)

| Pin | Signal                                   |
|-----|------------------------------------------|
| 1   | +5V / +12V (1A)                          |
| 2   | Brightness Control                       |
| 3   | Ground                                   |
| 4   | Ground                                   |
| 5   | Backlight Enable (Controlled by CH7308C) |

## 2.42 LVDS Output (CN29)

| Pin | Signal                | Pin | Signal               |
|-----|-----------------------|-----|----------------------|
| 1   | Back-Light Enable     | 2   | Back-Light Control   |
| 3   | LCD Volt.             | 4   | Ground               |
| 5   | LA_CLK#               | 6   | LA_CLK               |
| 7   | LCD Volt.             | 8   | Ground               |
| 9   | LA_DATA#_0            | 10  | LA_DATA_0            |
| 11  | LA_DATA#_1            | 12  | LA_DATA_1            |
| 13  | LA_DATA#_2            | 14  | LA_DATA_2            |
| 15  | LA_DATA#_3 (Optional) | 16  | LA_DATA_3 (Optional) |
| 17  | N/C                   | 18  | N/C                  |
| 19  | N/C                   | 20  | N/C                  |
| 21  | N/C                   | 22  | N/C                  |
| 23  | N/C                   | 24  | N/C                  |
| 25  | N/C                   | 26  | N/C                  |
| 27  | LCD Volt.             | 28  | Ground               |
| 29  | N/C                   | 30  | N/C                  |

## 2.43 USB Port 1 & 2 (CN30)

---

| Pin | Signal      | Pin | Signal      |
|-----|-------------|-----|-------------|
| 1   | +5V Standby | 5   | +5V Standby |
| 2   | Data0-      | 6   | Data1-      |
| 3   | Data0+      | 7   | Data1+      |
| 4   | Ground      | 8   | Ground      |

## 2.44 PS/2 Keyboard & Mouse (CN31)

---

| Pin | Signal        | Pin | Signal         |
|-----|---------------|-----|----------------|
| 1   | Keyboard Data | 2   | Keyboard Clock |
| 3   | Ground        | 4   | +5V            |
| 5   | Mouse Data    | 6   | Mouse Clock    |

## 2.45 COM Port #1 (CN32)

---

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1   | DCDA   | 2   | RXA    |
| 3   | TXA    | 4   | DTRA   |
| 5   | Ground | 6   | DSRA   |
| 7   | RTSA   | 8   | CTSA   |
| 9   | RIA    |     |        |

## 2.46 CRT Display Connector (CN33)

---

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1   | RED    | 2   | GREEN  |
| 3   | BLUE   | 4   | N/C    |
| 5   | GREEN  | 6   | Ground |
| 7   | Ground | 8   | Ground |

|    |          |    |           |
|----|----------|----|-----------|
| 9  | +5 Volt. | 10 | CRT_PLUG# |
| 11 | N/C      | 12 | DDCDATA   |
| 13 | HSYNC    | 14 | VSYNC     |
| 15 | DDCCLK   |    |           |

## 2.47 SIM Card Socket (CN34)

| Pin | Signal  | Pin | Signal   |
|-----|---------|-----|----------|
| 1   | UIM_PWR | 2   | UIM_RST  |
| 3   | UIM_CLK | 4   | Ground   |
| 5   | UIM_VPP | 6   | UIM_DATA |

## 2.48 CompactFlash Disk (CFD1)

| Pin | Signal | Pin | Signal    |
|-----|--------|-----|-----------|
| 1   | Ground | 26  | Ground    |
| 2   | PDD3   | 27  | PDD11     |
| 3   | PDD4   | 28  | PDD12     |
| 4   | PDD5   | 29  | PDD13     |
| 5   | PDD6   | 30  | PDD14     |
| 6   | PDD7   | 31  | PDD15     |
| 7   | PDCS#1 | 32  | PDCS#3    |
| 8   | Ground | 33  | Ground    |
| 9   | Ground | 34  | PDIOR#    |
| 10  | Ground | 35  | PDIOW#    |
| 11  | Ground | 36  | +3.3V     |
| 12  | Ground | 37  | INT_IRQ14 |
| 13  | +3.3V  | 38  | +3.3V     |
| 14  | Ground | 39  | CSEL#     |
| 15  | Ground | 40  | N/C       |

|    |        |    |         |
|----|--------|----|---------|
| 16 | Ground | 41 | IDERST# |
| 17 | Ground | 42 | PIORDY  |
| 18 | PDA2   | 43 | N/C     |
| 19 | PDA1   | 44 | +3.3V   |
| 20 | PDA0   | 45 | DASP#   |
| 21 | PDD0   | 46 | PDIAG#  |
| 22 | PDD1   | 47 | PDD8    |
| 23 | PDD2   | 48 | PDD9    |
| 24 | N/C    | 49 | PDD10   |
| 25 | Ground | 50 | Ground  |

## 2.49 Mini-Card Slot #1 (PCIE1)

| Pin | Signal     | Pin | Signal        |
|-----|------------|-----|---------------|
| 1   | PCIE_WAKE# | 2   | +3.3V Standby |
| 3   | N/C        | 4   | Ground        |
| 5   | N/C        | 6   | +1.5V         |
| 7   | CLKREQ#    | 8   | UIM_PWR       |
| 9   | Ground     | 10  | UIM_DATA      |
| 11  | MCARD_CLK# | 12  | UIM_CLK       |
| 13  | MCARD_CLK  | 14  | UIM_RESET     |
| 15  | Ground     | 16  | UIM_VPP       |
| 17  | N/C        | 18  | Ground        |
| 19  | N/C        | 20  | W_DISABLE#    |
| 21  | Ground     | 22  | PCIE_RST#     |
| 23  | PCIE_RXN1  | 24  | +3.3V Standby |
| 25  | PCIE_RXP1  | 26  | Ground        |
| 27  | Ground     | 28  | +1.5V         |
| 29  | Ground     | 30  | SMBCLK        |

|    |               |    |               |
|----|---------------|----|---------------|
| 31 | PCIE_TXN1     | 32 | SMBDATA       |
| 33 | PCIE_TXP1     | 34 | Ground        |
| 35 | Ground        | 36 | USB_Data8-    |
| 37 | Ground        | 38 | USB_Data8+    |
| 39 | +3.3V Standby | 40 | Ground        |
| 41 | +3.3V Standby | 42 | N/C           |
| 43 | Ground        | 44 | N/C           |
| 45 | N/C           | 46 | N/C           |
| 47 | N/C           | 48 | +1.5V         |
| 49 | N/C           | 50 | Ground        |
| 51 | N/C           | 52 | +3.3V Standby |

### 2.50 DDR3 SODIMM Slot (DIMM1)

Standard specification

## Below Table for China RoHS Requirements

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<br>(Pb) | 汞<br>(Hg) | 镉<br>(Cd) | 六价铬<br>(Cr(VI)) | 多溴联苯<br>(PBB) | 多溴二苯醚<br>(PBDE) |
| 印刷电路板<br>及其电子组件                                                                                                                                                                                | ×         | ○         | ○         | ○               | ○             | ○               |
| 外部信号<br>连接器及线材                                                                                                                                                                                 | ×         | ○         | ○         | ○               | ○             | ○               |
|                                                                                                                                                                                                |           |           |           |                 |               |                 |
|                                                                                                                                                                                                |           |           |           |                 |               |                 |
|                                                                                                                                                                                                |           |           |           |                 |               |                 |
|                                                                                                                                                                                                |           |           |           |                 |               |                 |
|                                                                                                                                                                                                |           |           |           |                 |               |                 |
|                                                                                                                                                                                                |           |           |           |                 |               |                 |
|                                                                                                                                                                                                |           |           |           |                 |               |                 |
|                                                                                                                                                                                                |           |           |           |                 |               |                 |
|                                                                                                                                                                                                |           |           |           |                 |               |                 |
| <p><b>O:</b> 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<br/>SJ/T 11363-2006 标准规定的限量要求以下。</p> <p><b>X:</b> 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<br/>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> |           |           |           |                 |               |                 |

## 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 PCM-LN05 Rev.B 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 PCM-LN05 Rev.B comes with an AutoRun CD-ROM that contains all drivers and utilities that can help you to install the driver automatically.

Insert the driver CD, the driver CD-title will auto start and show the installation guide. If not, please follow the sequence below to install the drivers.

***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 Audio Driver

Step 5 – Install TPM Driver (Optional)

Step 6 – Install Touch Driver (Optional)

Step 7 – Install Rapid Storage Technology Driver (Optional)

Please read instructions below for further detailed installations.

## 4.1 Installation:

---

Insert the PCM-LN05 Rev.B CD-ROM into the CD-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.exe***
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

### Step 2 – Install VGA Driver

1. Click on the **STEP2-VGA** folder and select the OS folder your system is
2. Double click on the **Setup.exe** file located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

### Step 3 –Install LAN Driver

1. Click on the **STEP3-LAN** folder and select the **WDM** folder
2. Double click on the **PROWin32.exe** file
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

#### Step 4 –Install Audio Driver

1. Click on the **STEP4-AUDIO** folder and select the OS folder 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 install the driver automatically

#### Step 5 –Install TPM Driver (Optional)

1. Click on the **STEP5-TPM (Option)** folder and double click on the **Setup.exe**
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

#### Step 6 –Install Touch Driver (Optional)

1. Click on the **STEP6-TOUCH (Option)** folder and select the OS folder your system is
2. Double click on the **.exe** located in each OS folder
3. Follow the instructions that the window shows
4. The system will help you install the driver automatically

#### Step 7 –Install Rapid Storage Technology Driver (Optional)

1. Click on the **STEP7-RAPID STORAGE (Option)** folder and double click on the **setup.exe**
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

## Appendix

# A

## Programming the Watchdog Timer

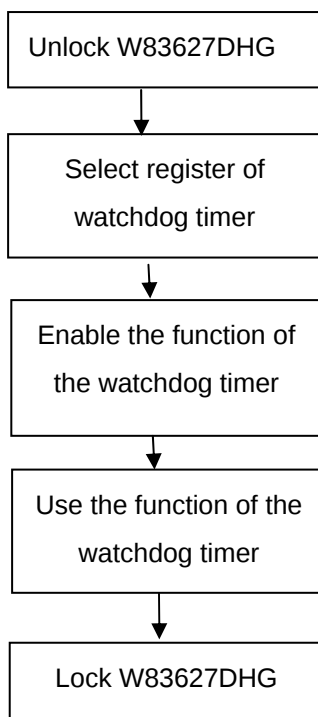
## A.1 Programming

---

PCM-LN05 Rev.B 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

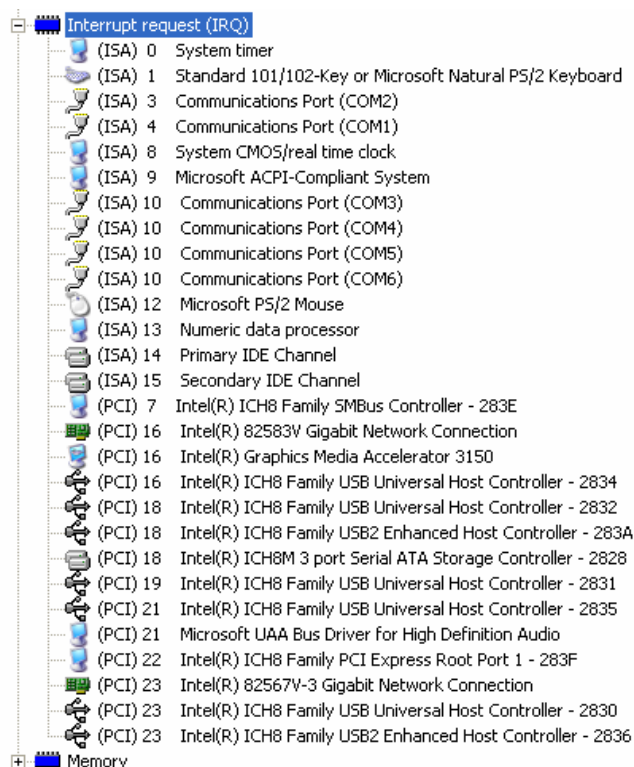
| Input/output (IO)                                                                   |                                                                               |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
|    | [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 - 0000006D] 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                                  |
|  | [00000170 - 00000177] Secondary IDE Channel                                   |
|  | [000001F0 - 000001F7] Primary IDE Channel                                     |
|  | [00000274 - 00000277] ISAPNP Read Data Port                                   |
|  | [00000279 - 00000279] ISAPNP Read Data Port                                   |
|  | [00000295 - 000002A4] Motherboard resources                                   |
|  | [000002E0 - 000002E7] Communications Port (COM5)                              |
|  | [000002E8 - 000002EF] Communications Port (COM4)                              |
|  | [000002F0 - 000002F7] Communications Port (COM6)                              |
|  | [000002F8 - 000002FF] Communications Port (COM2)                              |
|  | [00000376 - 00000376] Secondary IDE Channel                                   |

|                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
|    | [00000378 - 0000037F] Printer Port (LPT1)                                        |
|    | [00000380 - 000003BB] Intel(R) Graphics Media Accelerator 3150                   |
|    | [000003C0 - 000003DF] Intel(R) Graphics Media Accelerator 3150                   |
|    | [000003E8 - 000003EF] Communications Port (COM3)                                 |
|    | [000003F6 - 000003F6] Primary IDE Channel                                        |
|    | [000003F8 - 000003FF] Communications Port (COM1)                                 |
|    | [00000480 - 000004BF] Motherboard resources                                      |
|    | [000004D0 - 000004D1] Motherboard resources                                      |
|    | [00000800 - 0000087F] Motherboard resources                                      |
|    | [00000A79 - 00000A79] ISAPNP Read Data Port                                      |
|    | [00000D00 - 0000FFFF] PCI bus                                                    |
|    | [0000E000 - 0000E01F] Intel(R) 82583V Gigabit Network Connection                 |
|    | [0000E000 - 0000EFFF] Intel(R) ICH8 Family PCI Express Root Port 1 - 283F        |
|    | [0000F000 - 0000F01F] Intel(R) ICH8 Family SMBus Controller - 283E               |
|    | [0000F020 - 0000F03F] Intel(R) ICH8 Family USB Universal Host Controller - 2832  |
|    | [0000F040 - 0000F05F] Intel(R) ICH8 Family USB Universal Host Controller - 2831  |
|    | [0000F060 - 0000F07F] Intel(R) ICH8 Family USB Universal Host Controller - 2830  |
|    | [0000F080 - 0000F09F] Intel(R) ICH8 Family USB Universal Host Controller - 2835  |
|    | [0000F0A0 - 0000F0BF] Intel(R) ICH8 Family USB Universal Host Controller - 2834  |
|    | [0000F0C0 - 0000F0DF] Intel(R) 82567V-3 Gigabit Network Connection               |
|    | [0000F0E0 - 0000F0EF] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828 |
|    | [0000F0F0 - 0000F0FF] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828 |
|    | [0000F100 - 0000F103] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828 |
|    | [0000F110 - 0000F117] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828 |
|   | [0000F120 - 0000F123] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828 |
|  | [0000F130 - 0000F137] Intel(R) ICH8M 3 port Serial ATA Storage Controller - 2828 |
|  | [0000F140 - 0000F14F] Intel(R) ICH8M Ultra ATA Storage Controllers - 2850        |
|  | [0000F190 - 0000F197] Intel(R) Graphics Media Accelerator 3150                   |

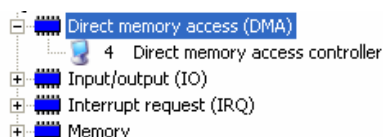
## B.2 1<sup>st</sup> MB Memory Address Map

| Memory                 |                                                           |
|------------------------|-----------------------------------------------------------|
| [000A0000 - 000BFFFF]  | Intel(R) Graphics Media Accelerator 3150                  |
| [000A0000 - 000BFFFF]  | PCI bus                                                   |
| [1F700000 - FFFFFFFF]  | PCI bus                                                   |
| [E0000000 - EFFFFFFF]  | Intel(R) Graphics Media Accelerator 3150                  |
| [F0000000 - F3FFFFFF]  | System board                                              |
| [FE800000 - FE8FFFFFF] | Intel(R) Graphics Media Accelerator 3150                  |
| [FE900000 - FE91FFFF]  | Intel(R) 82583V Gigabit Network Connection                |
| [FE900000 - FE9FFFFFF] | Intel(R) ICH8 Family PCI Express Root Port 1 - 283F       |
| [FE920000 - FE923FFF]  | Intel(R) 82583V Gigabit Network Connection                |
| [FEA00000 - FEA7FFFF]  | Intel(R) Graphics Media Accelerator 3150                  |
| [FEA80000 - FEAFFFFFF] | Intel(R) Graphics Media Accelerator 3150                  |
| [FEB00000 - FEB1FFFF]  | Intel(R) 82567V-3 Gigabit Network Connection              |
| [FEB20000 - FEB23FFF]  | Microsoft UAA Bus Driver for High Definition Audio        |
| [FEB24000 - FEB240FF]  | Intel(R) ICH8 Family SMBus Controller - 283E              |
| [FEB25000 - FEB253FF]  | Intel(R) ICH8 Family USB2 Enhanced Host Controller - 2836 |
| [FEB26000 - FEB263FF]  | Intel(R) ICH8 Family USB2 Enhanced Host Controller - 283A |
| [FEB27000 - FEB27FFF]  | Intel(R) 82567V-3 Gigabit Network Connection              |
| [FEC00000 - FEC0FFFF]  | Motherboard resources                                     |
| [FED14000 - FED19FFF]  | System board                                              |
| [FED1C000 - FED1FFFF]  | Motherboard resources                                     |
| [FED20000 - FED8FFFF]  | Motherboard resources                                     |
| [FEE00000 - FEE0FFFF]  | Motherboard resources                                     |
| [FFE00000 - FFFFFFFF]  | Motherboard resources                                     |

## B.3 IRQ Mapping Chart



## B.4 DMA Channel Assignments



Appendix

**C**

# Mating Connecotor

## C.1 List of Mating Connectors and Cables

The table notes mating connectors and available cables.

| Connector Label | Function                              | Mating Connector |              | Available Cable         | Cable P/N                     |
|-----------------|---------------------------------------|------------------|--------------|-------------------------|-------------------------------|
|                 |                                       | Vendor           | Model no.    |                         |                               |
| CN2             | CPU Fan Connector                     | Catch            | 1190-700-03S | N/A                     | N/A                           |
| CN3             | +5VSB Output w/ SMBus                 | Catch            | 2418HJ-06    | ATX External 5VSB Cable | External AUX Power and PS_ON# |
| CN4             | External +5VSB Power Input and PS_ON# |                  |              | ATX Cable               | 170220020B                    |
| CN5             | SATA Port 2                           | Molex            | 67582-0000   | SATA Cable              | 1709070500                    |
| CN6             | SATA Port 1                           | Molex            | 67582-0000   | SATA Cable              | 1709070500                    |
| CN7             | LPC Expansion I/F                     | Catch            |              | AAEON LPC Cable         | 1703120130                    |
| CN8             | External 5V Input                     | FLYING WAY       | FWAA210      | Power Cable             | 170204010P                    |
| CN9             | External 12V Input                    |                  |              | Power Cable             | 1702002010                    |
| CN10            | Touch Screen                          | LianTay          | H746-09      | N/A                     | N/A                           |
| CN11            | +5V Output for SATA HDD using         |                  |              | 2 Pins For SATA Power   | 1702150155                    |
| CN13            | COM Port #6                           | Molex            | 51021-0900   | UART Wafer Cable        | 1701090150                    |
| CN14            | USB Port #7                           | Molex            | 51021-0500   | USB Wafer               | 1700050207                    |

|      |                                     |         |                 | Cable            |            |
|------|-------------------------------------|---------|-----------------|------------------|------------|
| CN15 | COM Port #5                         | Molex   | 51021-0900      | UART Wafer Cable | 1701090150 |
| CN16 | USB Port #6                         | Molex   | 51021-0500      | USB Wafer Cable  | 1700050207 |
| CN17 | USB Port #5                         | Molex   | 51021-0500      | USB Wafer Cable  | 1700050207 |
| CN18 | COM Port #4                         | Molex   | 51021-0900      | UART Wafer Cable | 1701090150 |
| CN19 | USB Port #4                         | Molex   | 51021-0500      | USB Wafer Cable  | 1700050207 |
| CN20 | USB Port #3                         | Molex   | 51021-0500      | USB Wafer Cable  | 1700050207 |
| CN21 | COM Port #3                         | Molex   | 51021-0900      | UART Wafer Cable | 1701090150 |
| CN22 | COM Port #2                         | Molex   | 51021-0900      | UART Wafer Cable | 1701090150 |
| CN23 | Audio Line In/Out and MIC Connector | Catch   | 052-D200-14 P   | Audio Cable      | 1700140510 |
| CN24 | RJ-45 Ethernet #2                   | Neltron | 7001-8P8C       | N/A              | N/A        |
| CN25 | RJ-45 Ethernet #1                   | Neltron | 7001-8P8C       | N/A              | N/A        |
| CN26 | Digital I/O                         | Neltron | 2026B-10        | N/A              | N/A        |
| CN27 | Parallel Port                       | Catch   | H754-2x13       | Parallel Cable   | 1701260200 |
| CN28 | LVDS Inverter Control               | Molex   | ZHR-5           | Invertor Cable   | 1705050153 |
| CN29 | LVDS Output                         | HIROSE  | DF13-30DS-1.25C | N/A              | N/A        |
| CN31 | PS/2                                | Catch   | A003-290        | KB/MS            | 1700060152 |

|      |                           |       |            |                  |            |
|------|---------------------------|-------|------------|------------------|------------|
|      | Keyboard &<br>Mouse       |       |            | Cable            |            |
| BAT1 | External RTC<br>Connector | Molex | 51021-0200 | Battery<br>Cable | 175011901C |