

## **NVR-B75A**

Network Appliance

3.5" Hot-Swappable SATA HDD Tray x 5

3.5" HDD bracket x 1

Gigabit Ethernet x 2

USB3.0 x 4, USB2.0 x 2

VGA x 1, HDMI x 3

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## Packing List

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

- 1 CD-ROM for 4-port SC340 driver
- 1 DVD-ROM for Manual (in PDF Format) and Drivers
- 1 NVR-B75A

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

# Contents

## Chapter 1 General Information

|                          |     |
|--------------------------|-----|
| 1.1 Introduction.....    | 1-2 |
| 1.2 Features .....       | 1-3 |
| 1.3 Specifications ..... | 1-4 |

## Chapter 2 Hardware Installation

|   |     |
|---|-----|
| 2.1 Mechanical Drawing.....                               | 2-2 |
| 2.2 Installing the Front 3.5" Hard Disk Drive .....       | 2-3 |
| 2.3 Installing the 3.5" HDD to the internal HDD bracket . | 2-6 |

## Chapter 3 Driver Installation

|                        |     |
|------------------------|-----|
| 3.1 Installation ..... | 3-3 |
|------------------------|-----|

## Chapter 4 I/O Information

|  |     |
|--|-----|
| 4.1 I/O Address Map .....                      | 4-2 |
| 4.2 1 <sup>st</sup> MB Memory Address Map..... | 4-5 |
| 4.3 IRQ Mapping Chart .....                    | 4-6 |
| 4.4 DMA Channel Assignments .....              | 4-9 |

Chapter

1

**General  
Information**

## 1.1 Introduction

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NVR-B75A adopts the Intel® Core™ i3/ i5 Processor and equips with Intel® B75A chipset. Moreover, the system memory features 4GB DDR3-1333 240pin DIMM Memory up to 16GB. It deploys two LAN ports that consist of 10/100/1000Base-TX Ethernet RJ-45 ports. NVR-B75A features desktop form factor for network appliance applications.

This NVR-B75A supports up to five 3.5" hot-swappable HDD trays and one 3.5" internal System HDD bracket. Moreover, the flexible expansion interfaces feature one PCI-E[x16]. In addition, this model supports two USB3.0 ports on the front; two USB2.0 ports and two USB3.0 ports on the rear. Furthermore, the NVR-B75A can support dual displays with one VGA and three HDMI ports.

## 1.2 Features

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- Intel® LGA Socket 1155 with Intel Core™ i3-3220 Processor, Max TDP: 55W
- Intel® B75A Chipset
- 4GB DDR3-1333 240pin DIMM Memory, support up to 16GB
- 10/100/1000Base-TX Ethernet x 2
- Hot swappable SATA HDD tray x5, Internal 3.5" SATA HDD x 1
- Front: USB3.0 x 2, Rear: USB2.0 x 2 + USB3.0 x2
- Display: HDMI x 3, VGA x 1
- Audio Line-out, Line-in, Mic-in
- Windows® 7 Embedded Standard (optional)

### 1.3 Specifications

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#### *System*

|                      |   |
|----------------------|---|
| ● CPU                | Intel® LGA Socket 1155 with Intel Core™ i3-3220 Processor, Max TDP: 55W   |
| ● Chipset            | Intel B75A  |
| ● System Memory      | 4GB DDR3-1333 240pin DIMM Memory, support up to 16GB  |
| ● LCD/CRT Controller | Integrated in Processor, shared memory up to 256MB  |
| ● Ethernet           | 10/100/1000Base-TX, RJ-45 x 2   |
| ● Rear I/O Port      | USB 2.0 x 2<br>USB 3.0 x 2<br>Audio Line-out, Line-in, Mic-in x 1<br>VGA x 1<br>HDMI x 3<br>PS/2 x 1 (Keyboard + Mouse) |
| ● Storage            | 3.5" SATA System Hard Disk x 5 + 1 x 3.5" system HDD bracket  |
| ● Expansion Slot     | PCIe [x16] x 1 (SATA expansion card)  |

#### *Mechanical*

|              |   |
|--------------|---|
| ● Front Door | Front door cover with lock for HDD security |
| ● Dimension  | 275mm(W) x 205mm(D) x 300                   |

|                |       |
|----------------|-------|
|                | mm(H) |
| ● Gross Weight | 10 Kg |
| ● Net Weight   | 9 Kg  |

***Environmental***

|                         |                                  |
|-------------------------|----------------------------------|
| ● Operating Temperature | 0°C ~ 40°C (32°F ~ 104°F)        |
| ● Storage Temperature   | -20°C ~ 60°C (-4°F ~ 140°F)      |
| ● Storage Humidity      | 10%~80% @40°C;<br>non-condensing |

***Power Supply***

|                          |                           |
|--------------------------|---------------------------|
| ● DC Output              | 400W SFX type             |
| ● AC Input Voltage Range | 100~240VAC, 50~60HZ, 6-3A |

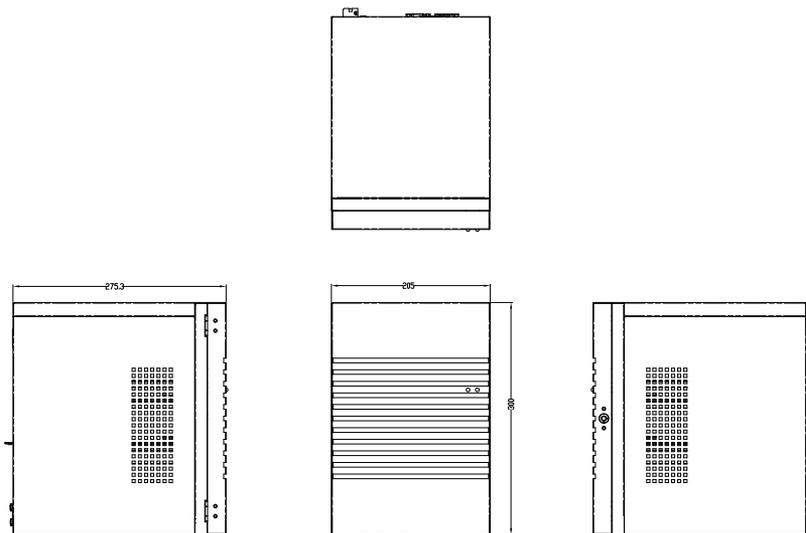
Chapter

2

**Hardware  
Installation**

## 2.1 Mechanical Drawing

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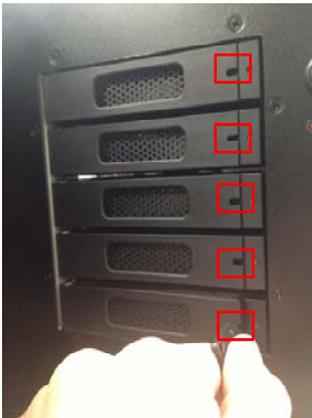
## 2.2 Installing the Front 3.5" Hard Disk Drive

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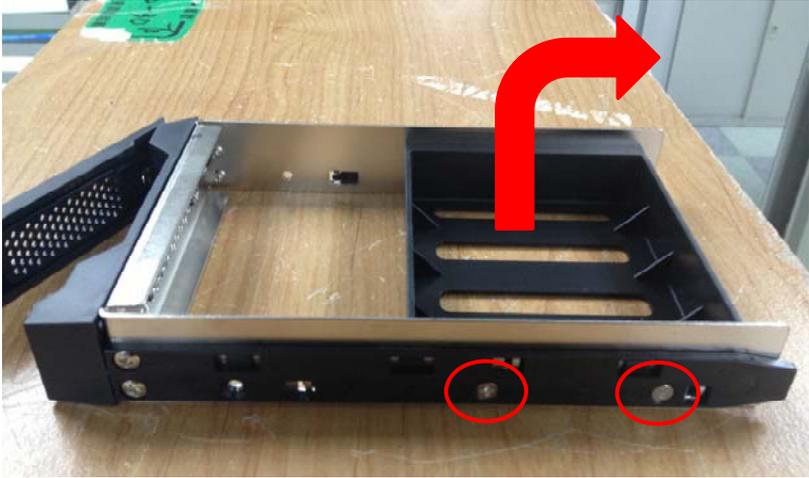
Step 1: Insert the Key and turn left.



Step 2: Plug the key into the hole and the door will open.



Step 3: Unfasten the 2 screws of each side and remove the black cover.



Step 4: Fasten the 2 screws on each side of the HDD.



Step 5: Put the HDD into the bay.



Step 6: Close the door. Then, Insert the key and turn right to lock the door



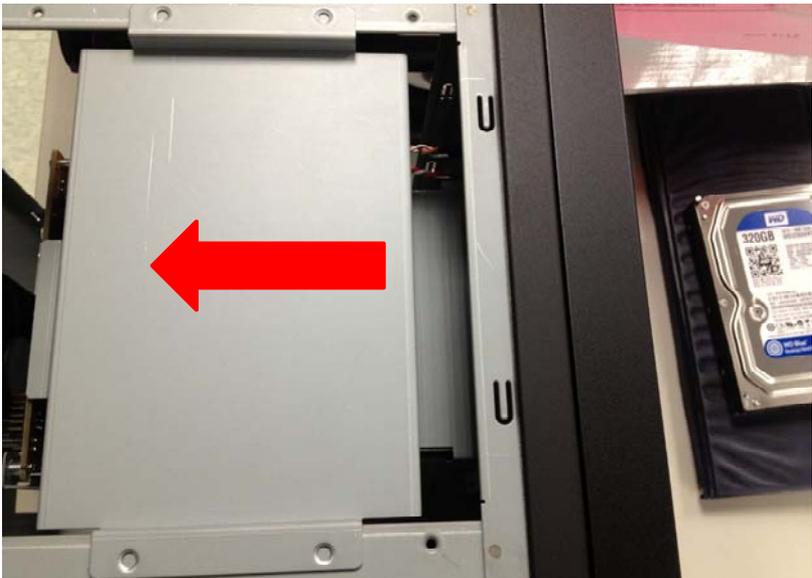
### 2.3 Installing the 3.5" HDD to the internal HDD bracket

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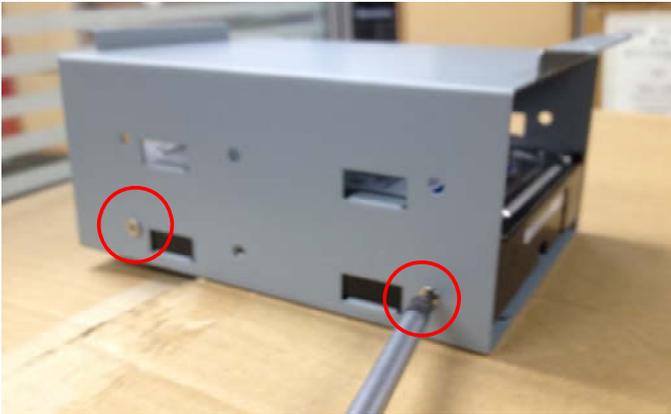
Step 1: Release the screws.



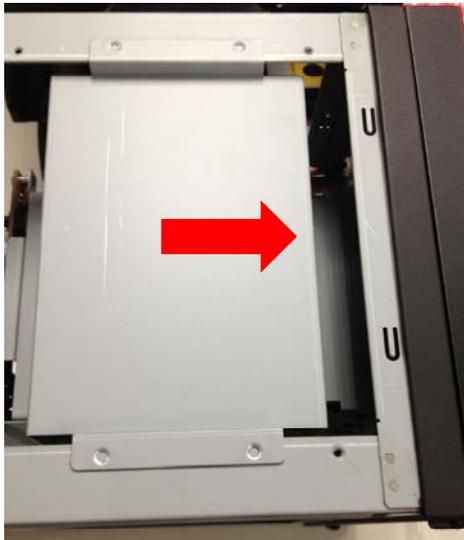
Step 2: Shift the HDD upper bracket from right to left and remove it.



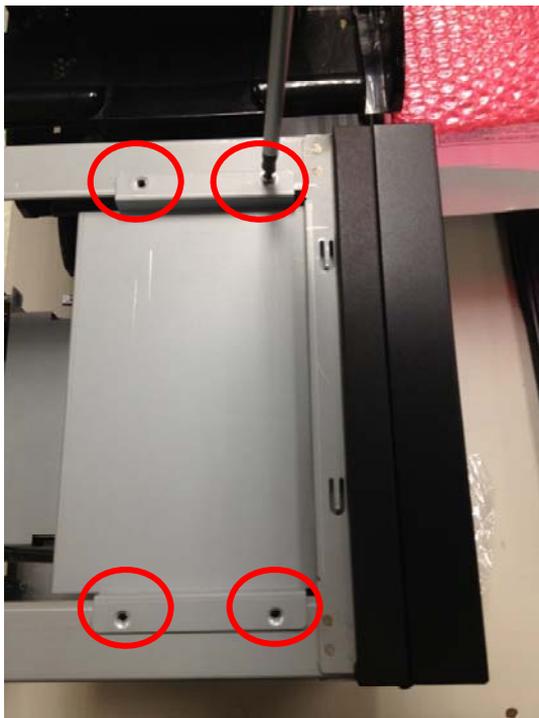
Step 3: Put the hard disk into the drive bay and lock it with four screws



Step 4: Put back the HDD bracket and push it to the right until it's locked in position.



Step 5: Firmly lock the HDD bracket with 4 screws.



Chapter

3

**Driver  
Installation**

The NVR-B75A comes with an AutoRun DVD-ROM that contains all drivers and utilities that can help you to install the driver automatically.

Insert the driver DVD, the driver DVD-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 ME Driver
- Step 6 – Install USB3.0 Driver
- Step 7 – Install AHCI Driver
- Step 8 – Install TPM Driver

Please read instructions below for further detailed installations.

### 3.1 Installation

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Insert the NVR-B75A DVD-ROM into the DVD -ROM drive and install the drivers from Step 1 to Step 8 in order.

#### Step 1 – Install Chipset Driver

1. Click on the **Chipset** folder and double click on the **Setup.exe** file
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 **VGA** folder and select the OS 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

##### For Intel LAN Chip

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

### For Realtek LAN Chip

1. Click on the **LAN** folder and select the **Realtek** folder
2. Select the OS folder your system is and 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 4 – Install Audio Driver

1. Click on the **Audio** folder and double click on the **SETUP.exe** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

### Step 5 – Install ME Driver

1. Click on the **ME** folder and double click on the **Setup.exe** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

### Step 6 – Install USB3.0 Driver

1. Click on the **USB3.0** folder and double click on the **setup.exe** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

### Step 7 – Install AHCI Driver

1. Click on the **AHCI** folder and select the folder of **AP**
2. Double click on the **iata\_cd.exe** file
3. Follow the instructions that the window shows

The system will help you install the driver automatically

### Step 8 – Install TPM Driver

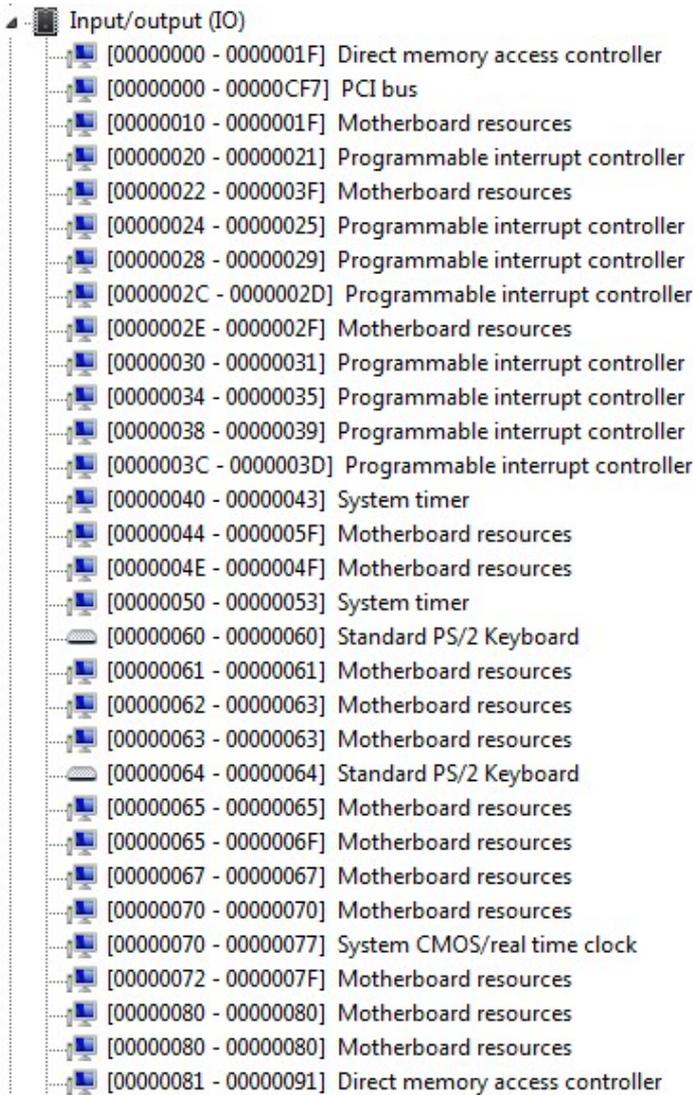
1. Click on the **TPM** folder and double click on the **Setup.exe** file
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Chapter

4

**I/O Information**

## 4.1 I/O Address Map



| Address Range         | Description                       |
|-----------------------|-----------------------------------|
| [00000000 - 0000001F] | Direct memory access controller   |
| [00000000 - 00000CF7] | PCI bus                           |
| [00000010 - 0000001F] | Motherboard resources             |
| [00000020 - 00000021] | Programmable interrupt controller |
| [00000022 - 0000003F] | Motherboard resources             |
| [00000024 - 00000025] | Programmable interrupt controller |
| [00000028 - 00000029] | Programmable interrupt controller |
| [0000002C - 0000002D] | Programmable interrupt controller |
| [0000002E - 0000002F] | Motherboard resources             |
| [00000030 - 00000031] | Programmable interrupt controller |
| [00000034 - 00000035] | Programmable interrupt controller |
| [00000038 - 00000039] | Programmable interrupt controller |
| [0000003C - 0000003D] | Programmable interrupt controller |
| [00000040 - 00000043] | System timer                      |
| [00000044 - 0000005F] | Motherboard resources             |
| [0000004E - 0000004F] | Motherboard resources             |
| [00000050 - 00000053] | System timer                      |
| [00000060 - 00000060] | Standard PS/2 Keyboard            |
| [00000061 - 00000061] | Motherboard resources             |
| [00000062 - 00000063] | Motherboard resources             |
| [00000063 - 00000063] | Motherboard resources             |
| [00000064 - 00000064] | Standard PS/2 Keyboard            |
| [00000065 - 00000065] | Motherboard resources             |
| [00000065 - 0000006F] | Motherboard resources             |
| [00000067 - 00000067] | Motherboard resources             |
| [00000070 - 00000070] | Motherboard resources             |
| [00000070 - 00000077] | System CMOS/real time clock       |
| [00000072 - 0000007F] | Motherboard resources             |
| [00000080 - 00000080] | Motherboard resources             |
| [00000080 - 00000080] | Motherboard resources             |
| [00000081 - 00000091] | Direct memory access controller   |

|   |                       |                                   |
|---|-----------------------|-----------------------------------|
|    | [00000081 - 00000091] | Direct memory access controller   |
|    | [00000084 - 00000086] | Motherboard resources             |
|    | [00000088 - 00000088] | Motherboard resources             |
|    | [0000008C - 0000008E] | Motherboard resources             |
|    | [00000090 - 0000009F] | Motherboard resources             |
|    | [00000092 - 00000092] | Motherboard resources             |
|    | [00000093 - 0000009F] | Direct memory access controller   |
|    | [000000A0 - 000000A1] | Programmable interrupt controller |
|    | [000000A2 - 000000BF] | Motherboard resources             |
|    | [000000A4 - 000000A5] | Programmable interrupt controller |
|    | [000000A8 - 000000A9] | Programmable interrupt controller |
|    | [000000AC - 000000AD] | Programmable interrupt controller |
|    | [000000B0 - 000000B1] | Programmable interrupt controller |
|    | [000000B2 - 000000B3] | Motherboard resources             |
|    | [000000B4 - 000000B5] | Programmable interrupt controller |
|    | [000000B8 - 000000B9] | Programmable interrupt controller |
|    | [000000BC - 000000BD] | Programmable interrupt controller |
|    | [000000C0 - 000000DF] | Direct memory access controller   |
|    | [000000E0 - 000000EF] | Motherboard resources             |
|    | [000000F0 - 000000FF] | Numeric data processor            |
|    | [00000170 - 00000177] | ATA Channel 1                     |
|    | [000001F0 - 000001F7] | ATA Channel 0                     |
|    | [000002F8 - 000002FF] | Communications Port (COM2)        |
|    | [00000376 - 00000376] | ATA Channel 1                     |
|   | [000003B0 - 000003BB] | Intel(R) HD Graphics              |
|  | [000003C0 - 000003DF] | Intel(R) HD Graphics              |
|  | [000003F6 - 000003F6] | ATA Channel 0                     |
|  | [000003F8 - 000003FF] | Communications Port (COM1)        |
|  | [00000400 - 00000453] | Motherboard resources             |
|  | [00000454 - 00000457] | Motherboard resources             |
|  | [00000458 - 0000047F] | Motherboard resources             |
|  | [000004D0 - 000004D1] | Motherboard resources             |

|   |   |
|---|---|
|  | [000004D0 - 000004D1] Motherboard resources   |
|  | [000004D0 - 000004D1] Programmable interrupt controller   |
|  | [00000500 - 0000057F] Motherboard resources   |
|  | [00000680 - 0000069F] Motherboard resources   |
|  | [00000A00 - 00000A1F] Motherboard resources   |
|  | [00000A20 - 00000A2F] Motherboard resources   |
|  | [00000A30 - 00000A3F] Motherboard resources   |
|  | [00000D00 - 0000FFFF] PCI bus   |
|  | [00001000 - 0000100F] Motherboard resources   |
|  | [0000164E - 0000164F] Motherboard resources   |
|  | [0000D000 - 0000D0FF] Realtek PCIe GBE Family Controller #2   |
|  | [0000D000 - 0000DFFF] Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 2 - 1E12              |
|  | [0000E000 - 0000E0FF] Realtek PCIe GBE Family Controller  |
|  | [0000E000 - 0000EFFF] Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 1 - 1E10              |
|  | [0000F000 - 0000F03F] Intel(R) HD Graphics  |
|  | [0000F040 - 0000F05F] Intel(R) 7 Series/C216 Chipset Family SMBus Host Controller - 1E22                |
|  | [0000F060 - 0000F06F] Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08 |
|  | [0000F070 - 0000F07F] Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08 |
|  | [0000F080 - 0000F083] Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08 |
|  | [0000F090 - 0000F097] Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08 |
|  | [0000F0A0 - 0000F0A3] Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08 |
|  | [0000F0B0 - 0000F0B7] Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08 |
|  | [0000F0C0 - 0000F0CF] Intel(R) 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E00 |
|  | [0000F0D0 - 0000F0DF] Intel(R) 7 Series/C216 Chipset Family 4 port Serial ATA Storage Controller - 1E00 |
|  | [0000FFFF - 0000FFFF] Motherboard resources   |
|  | [0000FFFF - 0000FFFF] Motherboard resources   |

## 4.2 1<sup>st</sup> MB Memory Address Map

| Address Range          | Device Name   |
|------------------------|---|
| [000A0000 - 000BFFFF]  | Intel(R) HD Graphics  |
| [000A0000 - 000BFFFF]  | PCI bus   |
| [000D0000 - 000D3FFF]  | PCI bus   |
| [000D4000 - 000D7FFF]  | PCI bus   |
| [000D8000 - 000DBFFF]  | PCI bus   |
| [000DC000 - 000DFFFF]  | PCI bus   |
| [000E0000 - 000E3FFF]  | PCI bus   |
| [000E4000 - 000E7FFF]  | PCI bus   |
| [20000000 - 201FFFFFF] | System board  |
| [40004000 - 40004FFF]  | System board  |
| [DFA00000 - DFA00FFF]  | Motherboard resources   |
| [DFA00000 - FEFFFFFF]  | PCI bus   |
| [E0000000 - EFFFFFFF]  | Intel(R) HD Graphics  |
| [F0000000 - F0003FFF]  | Realtek PCIe GBE Family Controller #2                                     |
| [F0000000 - F00FFFFFF] | Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 2 - 1E12      |
| [F0004000 - F0004FFF]  | Realtek PCIe GBE Family Controller #2                                     |
| [F0100000 - F0103FFF]  | Realtek PCIe GBE Family Controller  |
| [F0100000 - F01FFFFFF] | Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 1 - 1E10      |
| [F0104000 - F0104FFF]  | Realtek PCIe GBE Family Controller  |
| [F7800000 - F7BFFFFFF] | Intel(R) HD Graphics  |
| [F7C00000 - F7C0FFFF]  | Intel(R) USB 3.0 eXtensible Host Controller                               |
| [F7C10000 - F7C13FFF]  | High Definition Audio Controller  |
| [F7C15000 - F7C150FF]  | Intel(R) 7 Series/C216 Chipset Family SMBus Host Controller - 1E22        |
| [F7C16000 - F7C163FF]  | Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E26 |
| [F7C17000 - F7C173FF]  | Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E2D |
| [F7C1A000 - F7C1A0FF]  | Intel(R) Management Engine Interface                                      |
| [F8000000 - FBFFFFFF]  | Motherboard resources   |
| [FED00000 - FED003FF]  | High precision event timer  |
| [FED10000 - FED17FFF]  | Motherboard resources   |
| [FED18000 - FED18FFF]  | Motherboard resources   |
| [FED19000 - FED19FFF]  | Motherboard resources   |
| [FED1C000 - FED1FFFF]  | Motherboard resources   |
| [FED1C000 - FED1FFFF]  | Motherboard resources   |
| [FED20000 - FED3FFFF]  | Motherboard resources   |
| [FED40000 - FED44FFF]  | System board  |
| [FED45000 - FED8FFFF]  | Motherboard resources   |
| [FED90000 - FED93FFF]  | Motherboard resources   |
| [FEE00000 - FEEFFFFFF] | Motherboard resources   |
| [FF000000 - FFFFFFFF]  | Intel(R) 82802 Firmware Hub Device  |
| [FF000000 - FFFFFFFF]  | Motherboard resources   |

### 4.3 IRQ Mapping Chart

| Interrupt request (IRQ)  |                                 |
|--|---------------------------------|
|  (ISA) 0x00000000 (00)    | System timer                    |
|  (ISA) 0x00000001 (01)    | Standard PS/2 Keyboard          |
|  (ISA) 0x00000003 (03)    | Communications Port (COM2)      |
|  (ISA) 0x00000004 (04)    | Communications Port (COM1)      |
|  (ISA) 0x00000008 (08)    | System CMOS/real time clock     |
|  (ISA) 0x0000000C (12)    | Microsoft PS/2 Mouse            |
|  (ISA) 0x0000000D (13)    | Numeric data processor          |
|  (ISA) 0x0000000E (14)    | ATA Channel 0                   |
|  (ISA) 0x0000000F (15)    | ATA Channel 1                   |
|  (ISA) 0x00000051 (81)    | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000052 (82)    | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000053 (83)    | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000054 (84)    | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000055 (85)    | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000056 (86)    | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000057 (87)    | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000058 (88)    | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000059 (89)    | Microsoft ACPI-Compliant System |
|  (ISA) 0x0000005A (90)   | Microsoft ACPI-Compliant System |
|  (ISA) 0x0000005B (91)  | Microsoft ACPI-Compliant System |
|  (ISA) 0x0000005C (92)  | Microsoft ACPI-Compliant System |
|  (ISA) 0x0000005D (93)  | Microsoft ACPI-Compliant System |
|  (ISA) 0x0000005E (94)  | Microsoft ACPI-Compliant System |
|  (ISA) 0x0000005F (95)  | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000060 (96)  | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000061 (97)  | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000062 (98)  | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000063 (99)  | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000064 (100) | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000065 (101) | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000066 (102) | Microsoft ACPI-Compliant System |
|  (ISA) 0x00000067 (103) | Microsoft ACPI-Compliant System |

|   |                        |                                 |
|---|------------------------|---------------------------------|
|    | (ISA) 0x00000067 (103) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x00000068 (104) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x00000069 (105) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x0000006A (106) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x0000006B (107) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x0000006C (108) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x0000006D (109) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x0000006E (110) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x0000006F (111) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x00000070 (112) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x00000071 (113) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x00000072 (114) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x00000073 (115) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x00000074 (116) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x00000075 (117) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x00000076 (118) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x00000077 (119) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x00000078 (120) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x00000079 (121) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x0000007A (122) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x0000007B (123) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x0000007C (124) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x0000007D (125) | Microsoft ACPI-Compliant System |
|    | (ISA) 0x0000007E (126) | Microsoft ACPI-Compliant System |
|   | (ISA) 0x0000007F (127) | Microsoft ACPI-Compliant System |
|  | (ISA) 0x00000080 (128) | Microsoft ACPI-Compliant System |
|  | (ISA) 0x00000081 (129) | Microsoft ACPI-Compliant System |
|  | (ISA) 0x00000082 (130) | Microsoft ACPI-Compliant System |
|  | (ISA) 0x00000083 (131) | Microsoft ACPI-Compliant System |
|  | (ISA) 0x00000084 (132) | Microsoft ACPI-Compliant System |
|  | (ISA) 0x00000085 (133) | Microsoft ACPI-Compliant System |
|  | (ISA) 0x00000086 (134) | Microsoft ACPI-Compliant System |
|  | (ISA) 0x00000087 (135) | Microsoft ACPI-Compliant System |

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

|   |                        |   |
|---|------------------------|---|
|    | (ISA) 0x000000A7 (167) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000A8 (168) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000A9 (169) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000AA (170) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000AB (171) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000AC (172) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000AD (173) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000AE (174) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000AF (175) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000B0 (176) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000B1 (177) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000B2 (178) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000B3 (179) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000B4 (180) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000B5 (181) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000B6 (182) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000B7 (183) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000B8 (184) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000B9 (185) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000BA (186) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000BB (187) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000BC (188) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000BD (189) | Microsoft ACPI-Compliant System   |
|    | (ISA) 0x000000BE (190) | Microsoft ACPI-Compliant System   |
|   | (PCI) 0x00000005 (05)  | Intel(R) 7 Series/C216 Chipset Family SMBus Host Controller - 1E22                |
|  | (PCI) 0x00000010 (16)  | Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E2D         |
|  | (PCI) 0x00000010 (16)  | Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 1 - 1E10              |
|  | (PCI) 0x00000010 (16)  | Intel(R) Management Engine Interface  |
|  | (PCI) 0x00000010 (16)  | Xeon(R) processor E3-1200 v2/3rd Gen Core processor PCI Express Root Port - 0151  |
|  | (PCI) 0x00000011 (17)  | Intel(R) 7 Series/C216 Chipset Family PCI Express Root Port 2 - 1E12              |
|  | (PCI) 0x00000013 (19)  | Intel(R) 7 Series/C216 Chipset Family 2 port Serial ATA Storage Controller - 1E08 |
|  | (PCI) 0x00000016 (22)  | High Definition Audio Controller  |
|  | (PCI) 0x00000017 (23)  | Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E26         |
|  | (PCI) 0x00000017 (23)  | Intel(R) 7 Series/C216 Chipset Family USB Enhanced Host Controller - 1E26         |
|  | (PCI) 0xFFFFFFF8 (-5)  | Realtek PCIe GBE Family Controller #2   |
|  | (PCI) 0xFFFFFFF8 (-4)  | Realtek PCIe GBE Family Controller  |
|  | (PCI) 0xFFFFFFF9 (-3)  | Intel(R) USB 3.0 eXtensible Host Controller                                       |
|  | (PCI) 0xFFFFFFF9 (-2)  | Intel(R) HD Graphics  |

## 4.4 DMA Channel Assignments

-  Direct memory access (DMA)
-  4 Direct memory access controller