NanoCOM-TC

Intel® Atom™ Processor

Intel® EG20T PCH

Gigabit Ethernet

Onboard SATA SSD, 1 SATA 3.0 Gb/s

7 USB2.0 (6 USB Host, 1 USB Client)

4-Bit SDIO, 3 PCI-E[x1]

LPC Bus, SMBus

NanoCOM-TC Manual Rev.A 1st Ed.
January 2012

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Packing List

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

- 4 M2.5 Screw
- 1 CD-ROM for manual (in PDF format) and drivers
- 1 NanoCOM-TC

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 the debut of their new generation COM Express Module--NanoCOM-TC. The NanoCOM-TC is a cutting-edge product that provides high performance and low power consumption in the embedded market.

NanoCOM-TC adopts the latest Intel® Atom™ E620/E680 processor. The system memory deploys with onboard DDR2 667/800 memory up to 2 GB. In addition, Realtek RTL8211CL supports 10/100/1000Base-TX that allows faster network connections. This model applies three PCI-Express[x1], 4-bit SDIO multiplexed with GPIO pins, one LPC bus, and one SMBus. Moreover, one SATA SSD onboard and one SATA 3.0Gb/s are configured on the NanoCOM-TC. NanoCOM-TC also equips seven USB2.0 (six USB Host and one USB Client) for flexible I/O expansions.

The display of NanoCOM-TC supports LVDS/SDVO independent display and High definition video 2D/3D encoder/decoder. This brand new NanoCOM Express Module is developed to cater to the requirements of Automation, Medical, ticket machine, transportation, gaming, KIOSK, and POS/POI applications.

1.2 Features

- Intel® Atom™ E620/E680 Processor
- Intel® EG20T IOH
- Onboard DDR2 667/800 Memory Chip, Max. 2 GB
- Gigabit Ethernet
- Up to 24-bit Single Channel LVDS LCD
- High Definition Audio Interface
- SATA SSD (4G) x 1, SATA 3.0Gb/s x 1
- USB2.0 x 7 (USB Host x 6, USB Client x 1)
- PCI-Express[x1] x 3
- Wide DC Input Range, +4.75V to +14.7V (Optional)
- COM Express Pin-out Type 10,
- Nano Module Size, 84mm x 55mm, COM.0 Rev.2.0

1.3 Specifications

System

Form Factor	COM Express Nano Module, Pin-out Type 10, COM.0 Rev. 2.0
Processor	Onboard Intel® Atom™ E620/E680 processor, up to 1.6GHz
System Memory	Onboard DDR2 667/800 memory chip, up to 2 GB
Chipset	Intel® EG20T IOH
Ethernet	Realtek RTL8211CL,10/100/1000Base-TX
BIOS	AMI BIOS SPI type, 16MB ROM
EEPROM	Atmel® AT24C02, save BIOS and configuration data (Optional)
Wake On LAN	Yes
Watchdog Timer	Intel® Atom™ E620/E680 processor integrated
H/W Monitor Chipset	Supports CPU temperature monitoring
Expansion Interface	4-bit SDIO: Multiplexed with GPIO pins PCI-Express [x1] x 3 LPC bus x 1 SMBus x 1
Power Requirement	Wide DC input range, +4.75V to +14.7V (Optional) Nominal: +12V
Board Size	3.31”(L) x 2.17”(W) (84mm x 55mm)
Gross Weight	0.44 lb (0.2 Kg)
Operating	32˚F ~ 140˚F (0˚C ~ 60˚C), -40˚F ~ 185˚F

Temperature	(-40˚C ~ 85˚C) for WiTAS 2
● Storage Temperature	-40˚F ~ 176˚F (-40˚C ~ 80˚C)
● Operating Humidity	0% ~ 90% relative humidity, non-condensing

Display: Supports LVDS/SDVO independent display and High Definition Video 2D/3D Encoder/Decoder

● Chipset	Intel® Atom™ E620/E680 processor integrated
● Memory	Shared system memory up to 384MB/ DVMT 4.0
● Resolution	Up to 1280 x 1024 @ 85Hz for SDVO
	Up to 1280 x 768 @ 65Hz for LCD
	LVDS Default: 800x600 @ 18-bit
● LCD Interface	24-bit single channel LVDS
● SDVO	Supports SDVO x 1

I/O

● Storage	SATA SSD onboard (Master device), Max. 4 GB
	SATA 3.0Gb/s x 1
● USB Port	USB 2.0 x 7 (USB Host x 6, USB Client x 1)
● GPIO	Up to 4 in and 4 out
● Audio	High definition audio

Chapter

2

Quick Installation Guide

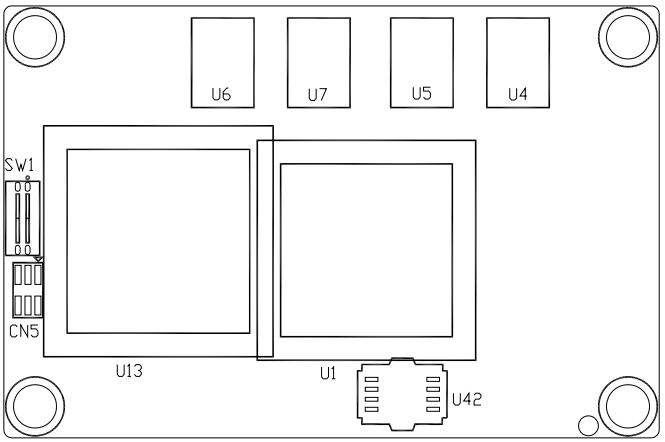
2.1 Safety Precautions

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.

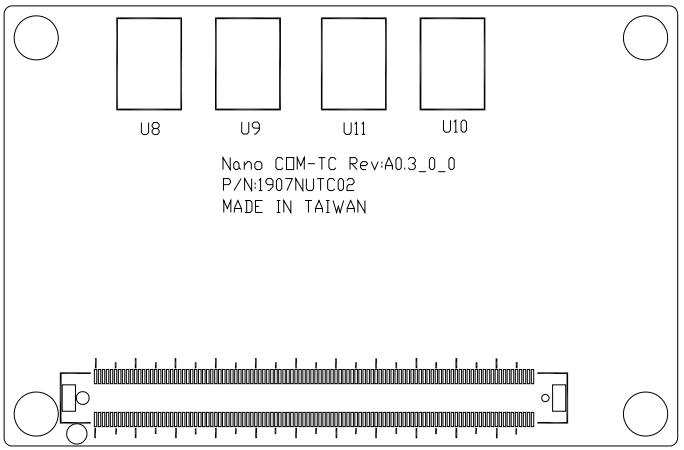
Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not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

2.2 Location of Connectors and Switch

Component Side

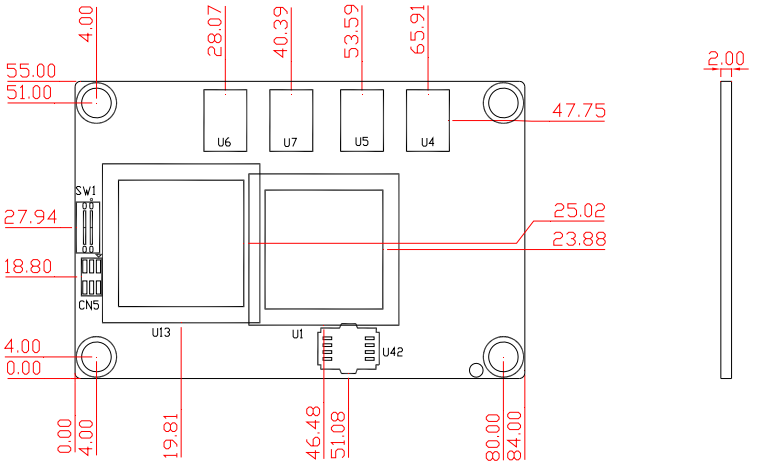


Solder Side

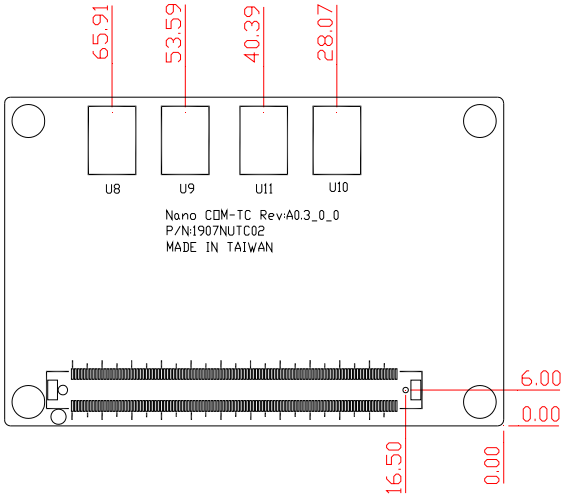


2.3 Mechanical Drawing

Component Side



Solder Side



2.4 List of Switch

There is a switch on the board that allows you to configure your system to suit your application. The table below shows the function of the switch.

Label	Function
SW1	AT/ATX & SSD Writing Protection Function Setting

2.5 List of Connectors

There are a number of connectors of the board that allow you to configure your system to suit your application. The table below shows the function of each connector in the board:

Label	Function
CN4	COM Express ROW A/B Connector
CN5	CPLD Write Programming Connector
U42	SPI BIOS Socket

2.6 AT/ATX & SSD Writing Protection Function Setting (SW1)

	ON	OFF
1	ATX Mode	AT Mode
2	SSD Writing Protection Function Enable	SSD Writing Protection Function Disable

2.7 COM Express Connector (Row A & B) (CN4)

Row A		Row B	
A1	GND	B1	GND
A2	GBE0_MDI3-	B2	GBE0_ACT#
A3	GBE0_MDI3+	B3	LPC_FRAME#
A4	GBE0_LINK100#	B4	LPC_AD0
A5	GBE0_LINK1000#	B5	LPC_AD1
A6	GBE0_MDI2-	B6	LPC_AD2
A7	GBE0_MDI2+	B7	LPC_AD3
A8	GBE0_LINK	B8	N.C.
A9	GBE0_MDI1-	B9	N.C.
A10	GBE0_MDI1+	B10	LPC_CLK
A11	GND	B11	GND
A12	GBE0_MDI0-	B12	PWRBTN#
A13	GBE0_MDI0+	B13	SMB_CK
A14	N.C.	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	N.C.
A19	SATA0_RX+	B19	SATA1_RX+
A20	SATA0_RX-	B20	SATA1_RX-
A21	GND	B21	GND
A22	N.C.	B22	N.C.
A23	N.C.	B23	N.C.
A24	N.C.	B24	PWR_OK
A25	N.C.	B25	N.C.
A26	N.C.	B26	N.C.
A27	N.C.	B27	WDT
A28	ATA_ACT#	B28	N.C.
A29	AC_SYNC	B29	AC_SDIN1
A30	AC_RST#	B30	AC_SDIN0
A31	GND	B31	GND
A32	AC_BITCLK	B32	SPKR
A33	AC_SDOUT	B33	I2C_CK
A34	BIOS_DIS1#	B34	I2C_DAT
A35	THRMTRIP#	B35	THRM#
A36	N.C.	B36	USBDEV-
A37	N.C.	B37	USBDEV+
A38	N.C.	B38	USB_4_5_OC#
A39	USB4-	B39	USB5-
A40	USB4+	B40	USB5+
A41	GND	B41	GND

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	N.C.
A49	N.C.	B49	SYS_RESET#
A50	LPC_SERIRQ	B50	CB_RESET#
A51	GND	B51	GND
A52	N.C.	B52	N.C.
A53	N.C.	B53	N.C.
A54	GPI0 or SDIO_DATA0	B54	GPO1 or SDIO_CMD
A55	N.C.	B55	N.C.
A56	N.C.	B56	N.C.
A57	GND	B57	GPO2 or SDIO_WP
A58	N.C.	B58	N.C.
A59	N.C.	B59	N.C.
A60	GND	B60	GND
A61	PCIE_TX2+	B61	PCIE_RX2+
A62	PCIE_TX2-	B62	PCIE_RX2-
A63	GPI1 or SDIO_DATA1	B63	GPO3 or SDIO_CD#
A64	PCIE_TX1+	B64	PCIE_RX1+
A65	PCIE_TX1-	B65	PCIE_RX1-

A66	GND	B66	WAKE0#
A67	GPI2 or SDIO_DATA2	B67	WAKE1#
A68	PCIE_TX0+	B68	PCIE_RX0+
A69	PCIE_TX0-	B69	PCIE_RX0-
A70	GND	B70	GND
A71	LVDS_A0+	B71	DDIO0_PAIR0+
A72	LVDS_A0-	B72	DDIO0_PAIR0-
A73	LVDS_A1+	B73	DDIO0_PAIR1+
A74	LVDS_A1-	B74	DDIO0_PAIR1-
A75	LVDS_A2+	B75	DDIO0_PAIR2+
A76	LVDS_A2-	B76	DDIO0_PAIR2-
A77	LVDS_VDD_EN	B77	DDIO0_PAIR4+
A78	LVDS_A3+	B78	DDIO0_PAIR4-
A79	LVDS_A3-	B79	LVDS_BKLT_EN
A80	GND	B80	GND
A81	LVDS_A_CK+	B81	DDIO0_PAIR3+
A82	LVDS_A_CK-	B82	DDIO0_PAIR3-
A83	LVDS_I2C_CK	B83	LVDS_BKLT_CTRL
A84	LVDS_I2C_DAT	B84	VCC_5V_SBY
A85	GPI3 or SDIO_DATA3	B85	VCC_5V_SBY
A86	RSVD	B86	VCC_5V_SBY
A87	RSVD	B87	VCC_5V_SBY
A88	PCIE0_CK_REF+	B88	BIOS_DIS1#
A89	PCIE0_CK_REF-	B89	N.C.

A90	GND	B90	GND
A91	SPI_POWER	B91	SDVO_TVCLKIN+
A92	SPI_MISO	B92	SDVO_TVCLKIN-
A93	GPO0 or SDIO_CLK	B93	SDVO_STALL+
A94	SPI_CLK	B94	SDVO_STALL-
A95	SPI_MOSI	B95	N.C.
A96	GND	B96	N.C.
A97	TYPE_10#	B97	SPI_CS
A98	RS232-TX1	B98	SDVO_CTRLCLK
A99	RS232-RX1	B99	SDVO_CTRLDATA
A100	GND	B100	GND
A101	RS232-TX2.	B101	N.C.
A102	RS2-RX2	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	B110	GND

2.8 CPLD Writing Programming Connector (CN5)

Pin	Signal	Pin	Signal
1	TMS	4	TCK
2	TDI	5	GND
3	TDO	6	+3.3V

2.9 SPI BIOS Socket (U42)

Pin	Signal	Pin	Signal
1	SPI_CS#0	5	SPI_SI
2	SPI_SO	6	SPI_CLK
3	SPI_WP#	7	HOLD#
4	GND	8	**+3.3V**

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 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板及其电子组件	×	○	○	○	○	○
外部信号连接器及线材	×	○	○	○	○	○

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

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

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。

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 NanoCOM-TC 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/disable quiet boot option.

Security

Set setup administrator password.

Save&Exit

Exit system setup after saving the changes.

Chapter

4

Driver Installation

The NanoCOM-TC comes with a CD-ROM that contains all drivers your need.

Follow the sequence below to install the drivers:

Step 1 – Install AHCI Driver

Step 2 – Install Chipset Driver

Step 3 – Install VGA Driver

Step 4 – Install Audio Driver

Step 5 – Install LAN Driver

Note: If the system OS is Windows® XP, you have to install the AHCI driver first.

Please read following instructions for detailed installations.

4.1 Installation:

Insert the NanoCOM-TC CD-ROM into the CD-ROM Drive. And install the drivers from Step 1 to Step 5 in order.

Step 1 – Install AHCI Driver

Please refer to the Appendix C AHCI Settings.

Step 2 – Install Chipset Driver

1. Click on the ***STEP2-CHIPSET*** 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 3 – Install VGA Driver

1. Click on the ***STEP3-VGA*** folder, click on the folder of ***WIN_XP_7*** and select the relevant folder based on the BIOS SETUP MENU
2. Double click on ***WindowsDriverSETUP*** file located in each folder
3. Follow the instructions that the window shows
4. The system will help you to 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 ***.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 5 – Install LAN Driver

1. Click on the ***STEP5-LAN*** folder and select the OS your system is
2. Double click on ***PROWin32.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

Appendix

A

Programming the Watchdog Timer

A.1 General Information

The NanoCOM-TC utilizes Fintek F75111 chipset as its watchdog timer Controller.

The other Watchdog timer is set to second or minute and the range is 0 to 256 seconds or minutes.

When the timeout has occurred, that will generate a status bit to indicate it and write one will be clear.

A.2 Access Interface

The F75111 provides one serial access interface, I2C Bus, to read/write internal registers. The address of Serial Bus is configurable by using power-on trapping of standby power VBS3V. The pin 3 (GPIO13/I2C _ADDR) is multi-function pin. During the

VSB3V power-on, this pin serves as input detection of logic high or logic low. This pin is default pull-down resistor with 100K ohms

mapping the Serial Bus address 0x9C (1001_1100). Another Serial Bus address 0x6E (0110_1110) is set when external pull-up resistor with 10K ohms is connected in this pin.

A.3 Registers Description

Configuration and function select Register – Index 03h

Power-on default [7:0] =0000_1000b

Bit	Name	R/W	PWR	Description
7	Reserved	R/W	VSB3V	
6	IRQ_LEVEL	R/W	VSB3V	Select IRQ Polarity (Level). Set to 1, IRQ is low active and SMI# is high active. Default, the IRQ is high active and SMI# is low active.
5	IRQ_MODE	R/W	VSB3V	IRQ/SMI# mode select. 0-Level mode (IRQ mode), 1-Pulse Mode (SMI# mode). If pulse mode is selected, the active pulse is over 100us.
4-3	PIN12_MODE	R/W	VSB3V	00: GPIO12 01: LED12 IN this mode can use REG 0x06(bit5,4) to select LED frequency. 10: IRQ 11: WDTOUT11#
2	PIN11_MODE	R/W	VSB3V	0: GPIO11 1: LED11 IN this mode can use REG 0x06(bit3,2) to select LED frequency.
1-0	PIN10_MODE	R/W	VSB3V	00: GPIO10 01: LED10 IN this mode can use REG 0x06(bit1,0) to select LED frequency. 10,11: WD_OUT

Watchdog Timer Control Register – Index 36h

Power-on default [7:0] =0000_0000b

Bit	Name	R/W	PWR	Description
7	Reserved	RO	VSB3V	Reserved. Read will return 0.
6	STS_WD_TMOUT	R/W	VSB3V	Watchdog is timeout. When the watchdog is timeout, this bit will be set to one. If set to 1, write 1 will clear this bit. Write 0, no effect.

5	WD_ENABLE	R/W	VSB3V	Enable watchdog timer.
4	WD_PULSE	R/W	VSB3V	Watchdog output level or pulse. If set 0 (default), the pin of watchdog is level output. If write 1, the pin will output with a pulse.
3	WD_UNIT	R/W	VSB3V	Watchdog unit select. Default 0 is select second. Write 1 to select minute.
2	WD_HACTIVE	R/W	VSB3V	Program WD2 output level. If set to 1 and watchdog asserted, the pin will be high. If set to 0 and watchdog asserted, this pin will drive low (default).
1-0	WD_PSWIDTH			Watchdog pulse width selection. If the pin output is selected to pulse mode. This pulse width can be chosen. 00b-1m second. 01b-20m second. 10b-100m second. 11b- 4 second.

Watchdog Timer Range Register – Index 37h

Power-on default [7:0] =0000_0000b

Bit	Name	R/W	PWR	Description
7-0	WD_TIME	R/W	VSB3V	Watchdog timing range from 0~255. This unit is either second or minute programmed by the watchdog timer control register bit3.

A.4 F75111 Watchdog Timer Initial Program

```
#include <stdio.h>
#include <conio.h>
void Chk_Ready();
#define SMBus_Port          0x400
#define I2C_Addr     0x6E
#define RW_Bit              0x00   /* 0x00: Write 0x01:Read */
#define WDT_count 0x05   /* range 0~255 */
#define O_HSTS              0x01
#define O_CMD               0x05
#define O_DATA0     0x06

void main (void)
{
        Chk_Ready();
        outportb( SMBus_Port , 0x20);              /*Enable Alert*/
        outportb(SMBus_Port+0x04,(I2C_Addr|RW_Bit));
/* device ID (smbus): 6Eh    ,    index:3h    data:3h        //Set pin10 as
WDTOUT2# */
        outportb( SMBus_Port + O_CMD , 0x3);
        outportb( SMBus_Port + O_DATA0 , 0x3);        /*bit[1-0] : set to 1.*/
        outportb( SMBus_Port , 0x12);              /*Byte Command*/

        delay(10);
```

```
Chk_Ready();
        outportb( SMBus_Port , 0x20);              /*Enable Alert*/
        outportb(SMBus_Port+0x04,(I2C_Addr|RW_Bit));
/*set WDT count       */
        outportb( SMBus_Port + O_CMD , 0x37);
        outportb( SMBus_Port + O_DATA0 , WDT_count);      /*WDT count.*/
        outportb( SMBus_Port , 0x12);
        delay(10);

        Chk_Ready();
        outportb( SMBus_Port , 0x20);              /*Enable Alert*/
        outportb(SMBus_Port+0x04,(I2C_Addr|RW_Bit));
/* start WDT count    */
        outportb( SMBus_Port + O_CMD , 0x36);
        outportb( SMBus_Port + O_DATA0 , 0x72);      /* start WDT: 0x72    ,
stop WDT: 0x42 */
outportb( SMBus_Port , 0x12);
delay(10);
}

void Chk_Ready()
{
        char inputbuffer;
        int    index;
        index=0;
```

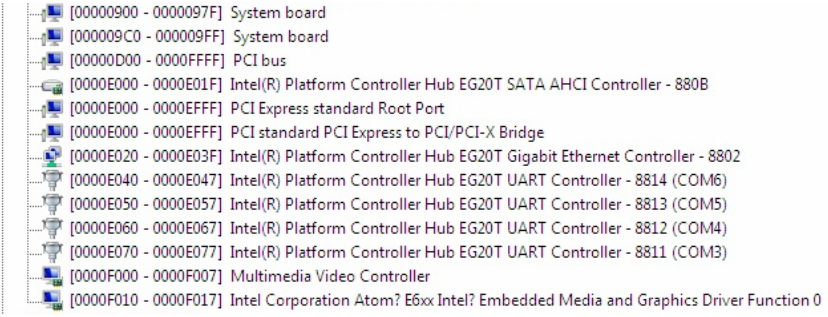
```
    while(index<0x800)
    {
       inputbuffer=inportb(SMBus_Port+O_HSTS);
                index++;
                if (inputbuffer & 0x08)                    /*smbus busy bit*/
                        {delay(10);}
                else
                        {return;}
    }
       printf("\nDevice not ready!\n");
       exit(0);
}
```

Appendix

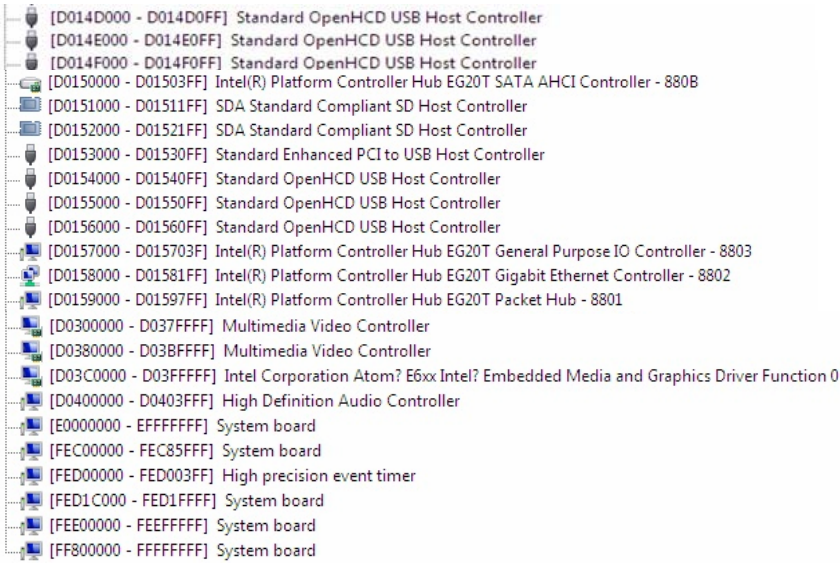
B

I/O Information

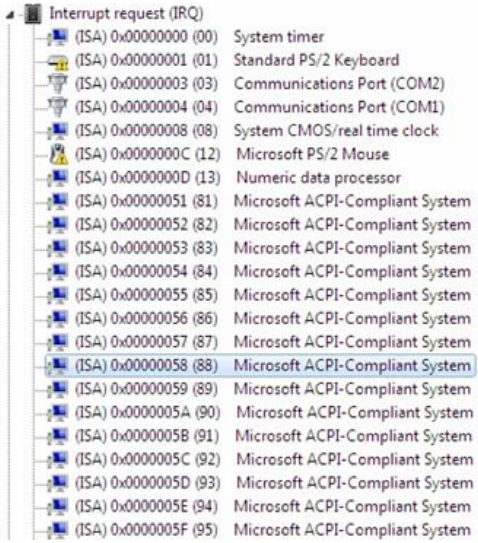
B.1 I/O Address Map



B.2 Memory Address Map



B.3 IRQ Mapping Chart



(ISA) 0x00000060 (96) Microsoft ACPI-Compliant System
(ISA) 0x00000061 (97) Microsoft ACPI-Compliant System
(ISA) 0x00000062 (98) Microsoft ACPI-Compliant System
(ISA) 0x00000063 (99) Microsoft ACPI-Compliant System
(ISA) 0x00000064 (100) Microsoft ACPI-Compliant System
(ISA) 0x00000065 (101) Microsoft ACPI-Compliant System
(ISA) 0x00000066 (102) Microsoft ACPI-Compliant System
(ISA) 0x00000067 (103) Microsoft ACPI-Compliant System
(ISA) 0x00000068 (104) Microsoft ACPI-Compliant System
(ISA) 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
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(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
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(ISA) 0x00000081 (129) Microsoft ACPI-Compliant System
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(ISA) 0x000000A5 (165) Microsoft ACPI-Compliant System
(ISA) 0x000000A6 (166) Microsoft ACPI-Compliant System
(ISA) 0x000000A7 (167) Microsoft ACPI-Compliant System
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(ISA) 0x000000A9 (169) Microsoft ACPI-Compliant System
(ISA) 0x000000AA (170) Microsoft ACPI-Compliant System
(ISA) 0x000000AB (171) Microsoft ACPI-Compliant System
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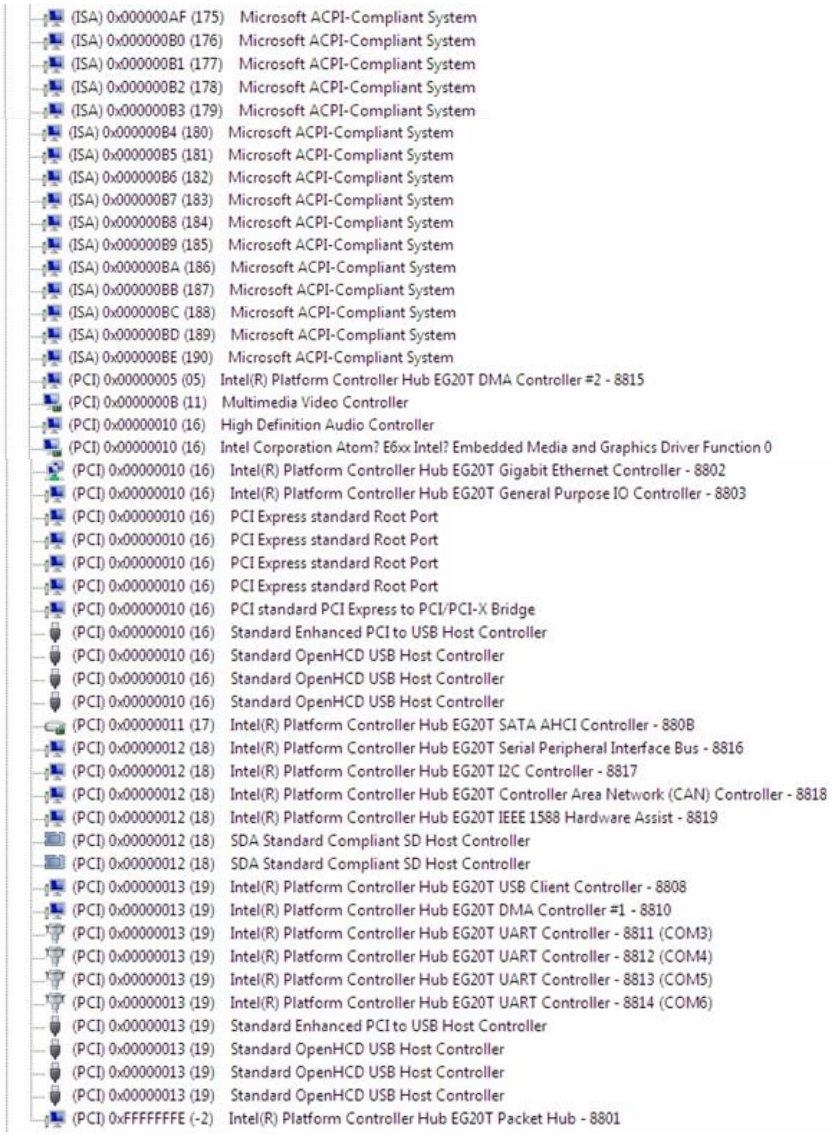
(ISA) 0x000000AD (173) Microsoft ACPI-Compliant System
(ISA) 0x000000AE (174) Microsoft ACPI-Compliant System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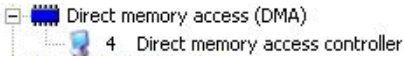
(ISA) 0x000000BD (189) Microsoft ACPI-Compliant System
(ISA) 0x000000BE (190) Microsoft ACPI-Compliant System
(PCI) 0x00000005 (05) Intel(R) Platform Controller Hub EG20T DMA Controller #2 - 8815
(PCI) 0x0000000B (11) Multimedia Video Controller
(PCI) 0x00000010 (16) High Definition Audio Controller
(PCI) 0x00000010 (16) Intel Corporation Atom? E6xx Intel? Embedded Media and Graphics Driver Function 0
(PCI) 0x00000010 (16) Intel(R) Platform Controller Hub EG20T Gigabit Ethernet Controller - 8802
(PCI) 0x00000010 (16) Intel(R) Platform Controller Hub EG20T General Purpose IO Controller - 8803
(PCI) 0x00000010 (16) PCI Express standard Root Port
(PCI) 0x00000010 (16) PCI Express standard Root Port
(PCI) 0x00000010 (16) PCI Express standard Root Port
(PCI) 0x00000010 (16) PCI Express standard Root Port
(PCI) 0x00000010 (16) PCI standard PCI Express to PCI/PCI-X Bridge
(PCI) 0x00000010 (16) Standard Enhanced PCI to USB Host Controller
(PCI) 0x00000010 (16) Standard OpenHCD USB Host Controller
(PCI) 0x00000010 (16) Standard OpenHCD USB Host Controller
(PCI) 0x00000010 (16) Standard OpenHCD USB Host Controller
(PCI) 0x00000011 (17) Intel(R) Platform Controller Hub EG20T SATA AHCI Controller - 880B
(PCI) 0x00000012 (18) Intel(R) Platform Controller Hub EG20T Serial Peripheral Interface Bus - 8816
(PCI) 0x00000012 (18) Intel(R) Platform Controller Hub EG20T I2C Controller - 8817
(PCI) 0x00000012 (18) Intel(R) Platform Controller Hub EG20T Controller Area Network (CAN) Controller - 8818
(PCI) 0x00000012 (18) Intel(R) Platform Controller Hub EG20T IEEE 1588 Hardware Assist - 8819
(PCI) 0x00000012 (18) SDA Standard Compliant SD Host Controller
(PCI) 0x00000012 (18) SDA Standard Compliant SD Host Controller
(PCI) 0x00000013 (19) Intel(R) Platform Controller Hub EG20T USB Client Controller - 8808
(PCI) 0x00000013 (19) Intel(R) Platform Controller Hub EG20T DMA Controller #1 - 8810
(PCI) 0x00000013 (19) Intel(R) Platform Controller Hub EG20T UART Controller - 8811 (COM3)
(PCI) 0x00000013 (19) Intel(R) Platform Controller Hub EG20T UART Controller - 8812 (COM4)
(PCI) 0x00000013 (19) Intel(R) Platform Controller Hub EG20T UART Controller - 8813 (COM5)
(PCI) 0x00000013 (19) Intel(R) Platform Controller Hub EG20T UART Controller - 8814 (COM6)
(PCI) 0x00000013 (19) Standard Enhanced PCI to USB Host Controller
(PCI) 0x00000013 (19) Standard OpenHCD USB Host Controller
(PCI) 0x00000013 (19) Standard OpenHCD USB Host Controller
(PCI) 0x00000013 (19) Standard OpenHCD USB Host Controller
(PCI) 0xFFFFFFFE (-2) Intel(R) Platform Controller Hub EG20T Packet Hub - 8801

B.4 DMA Channel Assignments



Appendix

C

AHCI Settings

C.1 WIN XP OS installation

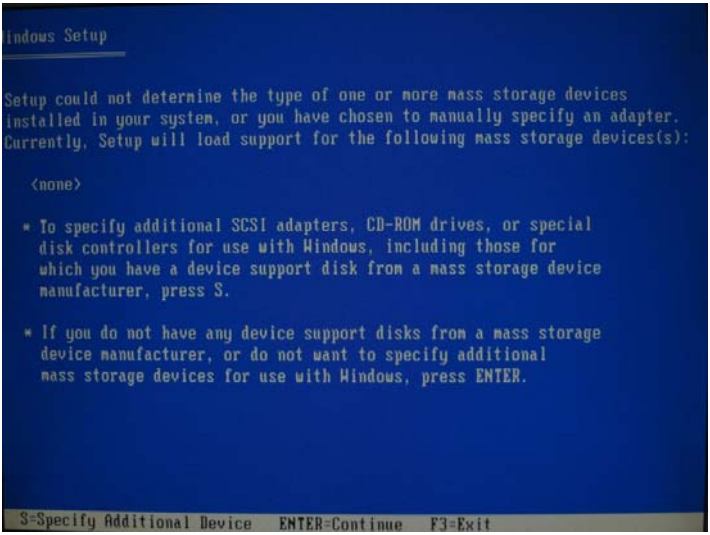
Step 1: Copy the files below from "***Driver CD -> "STEP 1- AHCI_WINXP" to Disk".***

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

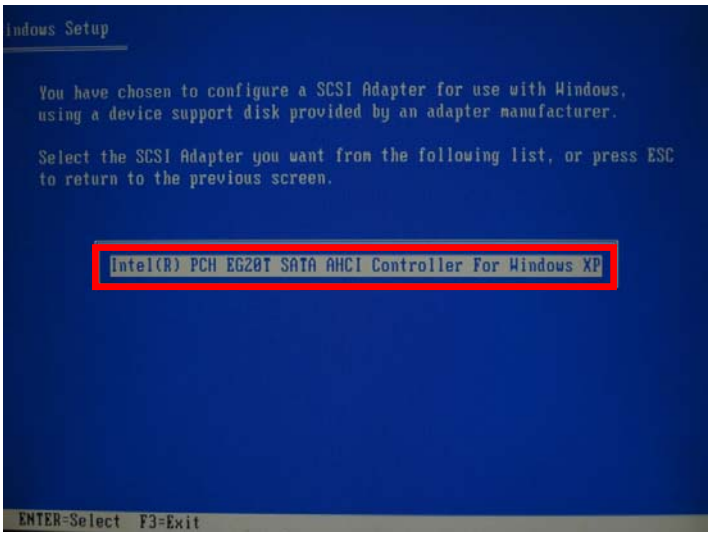
Step 3: Setup OS

Step 4: Press "**F6**"

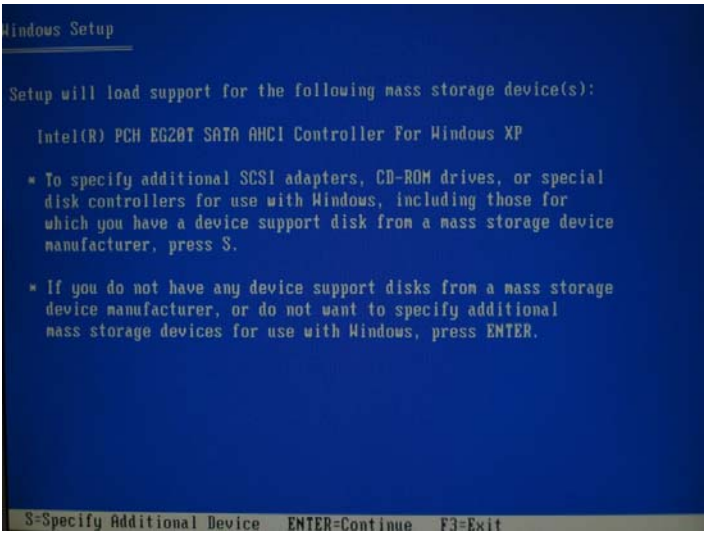
Step 5: Choose "**S**"



Step 6: Choose "**Intel(R) PCH EG20T SATA AHCI Controller For Windows XP**"



Step 7: It will show the model number you select and then press "**ENTER**"



Step 8: Setup is starting Windows