

XTX-945GSE

Onboard Intel® Atom™ N270
Processor
With LCD, Ethernet, PCI-E,
Audio, SATA, SDVO

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Packing List

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

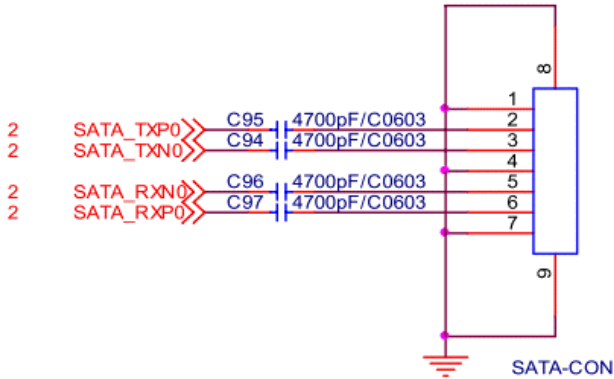
- 1 XTX-945GSE CPU Module
- 1 CD-ROM for manual (in PDF format) and drivers

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

Application Notes

- 1) After installing drivers in AT power mode under XP operation, there is no logo: "It is now safe to turn off your computer" during the process of turn-off.
- 2) Hyper threading technology only supports ATX mode rather than AT mode.
- 3) If entering VGA mode, we can install PCI-VGA drivers successfully. Suggest to remove Intel[®] on-board VGA drivers.
- 4) While installing OS into SATA HDD, please do not attach any IDE HDD during installation. If you need IDE HDD as storage devices, please connect IDE HDD after finishing the installation.
- 5) If using LCD with 800x480 pixel,
 - A. Please set LCD as primary; this resolution (800x480) will be hidden in monitor list.
 - B. If you want to do dual display, set 2 displays the same resolution. If CRT resolution is over LCD one. LCD cannot display.
 - C. The way to use dual display or extended display:
 - a. Please use control panel -> display -> adjust,
 - b. Use right button to select
- 6) "Wake on LAN" function is always on, and cannot be disabled.
- 7) Because XTX-945GSE has built in TPM function, its matching carrier board is TF-ECB-910M-A10.
- 8) DIO address is "2A1H."

- 9) Customer carrier board design reference: Please add the four capacitors (4700 pF, 50V) on the carrier board as show in graph below.



For more details, please contact with AAEON Customer Service Department for help.

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Chapter

1

**General
Information**

1.1 Introduction

XTX-945GSE is able to equip with Intel® Atom™ N270 processor and has one 200-pin DDR II 400/533 SODIMM to support system memory up to 2GB. XTX-945GSE adopts Intel® 945GSE+ ICH7M chipset that implements serial technologies with high performance. In addition, XTX-945GSE accommodates user-friendly expansion interfaces, ex: four PCI-Express[x1], four 32-bit PCI, one LPC bus, one SMBus and one I2C interface.

For the display specifications, XTX-945GSE integrates Intel® 945GSE and shared system memory is up to 224MB/DVMT 3.0. The display of XTX-945GSE supports CRT and 18/24-bit dual-channel LVDS LCD. Moreover, it supports NTSC/ PAL and Composite Video, S-Video on the carrier board. In addition, one SDVO port can be used through the SDVO connector to provide more flexibility for display function.

Compared to the ETX modules, the ISA bus has been replaced by SATA and PCI-Express interfaces on XTX modules. If you are looking for an economic, time-saving and high performance solution, XTX-945GSE definitely is your first choice.

1.2 Features

- Onboard Intel® Atom™ N270 Processor
- Intel® 945GSE + ICH7M
- DDRII 400/533 Memory, Max. 2GB
- 10/100Base-TX Ethernet
- CRT, Up to 24-bit Dual-channel LVDS LCD, TV, SDVO Connector x 1
- AC97 2.3 Codec 2CH Audio
- PATA x 1, SATA II x 2
- USB2.0 x 6
- PCI-Express [x1] x 4
- +5V Only Operation

1.3 Specifications

System

- CPU Onboard Intel® Atom™ N270 Processor
1.6GHz, FSB 533MHz
- Memory One 200-pin DDR II SODIMM, supports
DDR 400/533 up to 2GB
- Chipset Intel® 945GSE+ICH7M
- Ethernet Intel® EP82562ET, 10/100Base-TX
- BIOS Award, TSOP type, 1MB ROM
- Watchdog Timer Generates a Time-out System Reset
- H/W Status Monitoring Supports Power Supply Voltages, Fan
Speed and Temperatures Monitoring
- Wake on LAN Yes
- Expansion Interface PCI-E [x1] x4
32-bit PCI x 4
LPC Bus x 1
SMBus x 1
I2C x 1
- Power Supply Voltage +5V DC
- Power Consumption Atom N270 1.6GHz, DDRII 667 2GB
0.44A @ +12V, 2.6A @ +5V
w/ TF-ECB-910M-A10-01
- Board Size 4.5"(L) x 3.74"(W) (114mm x 95mm)
- Gross Weight 0.66lb (0.3kg)

- Operating Temperature 32°F~140°F (0°C~60°C)
- Storage Temperature -40°F~176°F (-40°C~80°C)
- MTBF (Hours) 104,000

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

- Chipset Intel® 945GSE integrated
- Memory Shared system memory up to 224MB/
DVMT 3.0
- Resolution Up to 2048x1536 (QXGA) for CRT; Up to
1600x1200 (UXGA) for LCD
- LCD Interface 18-bit dual-channel LVDS
(TF-XTX-945GSE-A10);
24-bit dual-channel LVDS
(TF-XTX-945GSE-A10-01)
- SDVO Port SDVO port x 1 for TF-XTX-945GSE-A10
Intel 945GSE integrated, supports
- TV-Out NTSC/PAL; supports Composite Video,
S-Video on carrier board

I/O

- Storage PATA x 1 (two devices), SATA II x 2
- Serial Port 2
- Parallel Port 1
- USB USB2.0 x 6

- PS/2 Port Keyboard x 1, Mouse x 1
- IrDA One IrDA Tx/Rx header
- Audio Mic-in, Line-in, Line-out

Chapter

2

**Quick
Installation
Guide**



2.1 Safety Precautions

Warning!

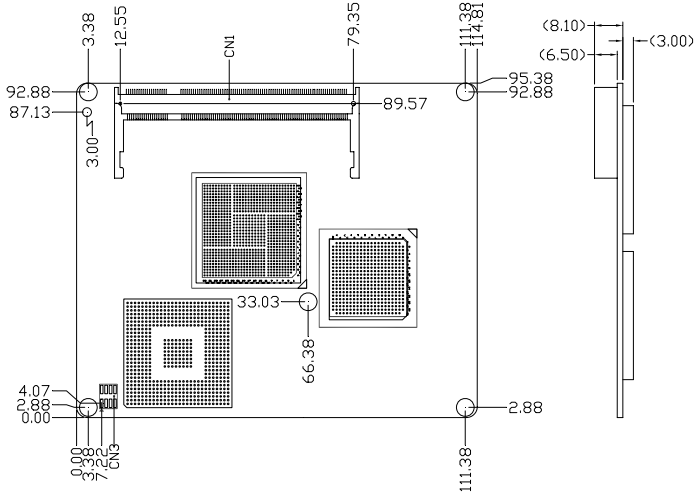
Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Caution!

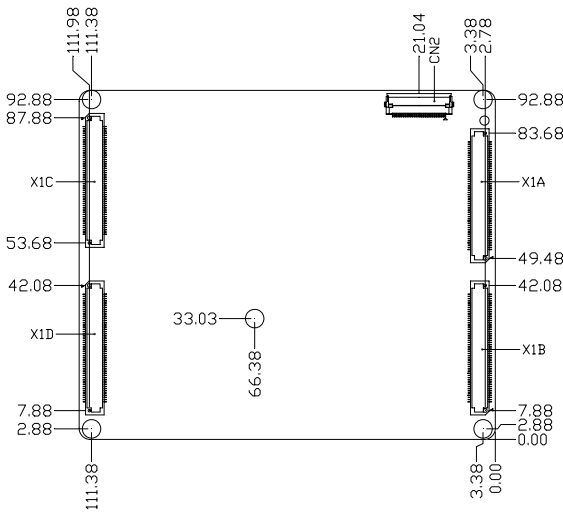
Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not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

2.2 Mechanical Drawing

Component Side



Solder Side



2.3 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 the board's connectors:

Connectors

Label	Function
CN1	DDRII SODIMM Slot
CN2	SDVO extension Slot
CN3	SPI Flash Programming Connector (Optional)
X1A	PCI / USB / Audio
X1B	PCI Express x1 / FAN / LPC / SATA / Power management signals / AC97 CODEC signals
X1C	VGA / LCD / Video out / COMs / LPT / FDD / IrDA / Mouse / Keyboard
X1D	IDE 1 / IDE 2 / Miscellaneous

2.4 SDVO Expansion Slot (CN2)

Pin	Signal	Pin	Signal
1	GND	2	SDVO_BCLKN
3	SDVO_BCLKP	4	GND
5	SDVO_GREEN#	6	SDVO_GREEN
7	GND	8	SDVO_INT#
9	SDVO_INT	10	GND
11	SDVO_BLUE#	12	SDVO_BLUE
13	GND	14	SDVO_RED#
15	SDVO_RED	16	GND
17	SDVO_FLDSTALL#	18	SDVO_FLDSTALL
19	GND	20	SDVOCTRL_CLK
21	SDVOCTRL_DATA	22	RESET#
23	+3.3V	24	+2.5V
25	+5V	26	GND
27	NC	28	NC
29	NC	30	NC

2.5 SPI Flash Programming Connector (Optional) (CN3)

Pin	Signal	Pin	Signal
1	+3.3V	2	GND
3	SPI_CS#0	4	SPI_CLK
5	SPI_SO	6	SPI_SI
7	N.C	8	N.C

2.6 XTX Connector (X1A)

Pin	Signal	Pin	Signal
1	GND	2	GND
3	PCICLK3	4	PCICLK4
5	GND	6	GND
7	PCICLK1	8	PCICLK2
9	REQ#3	10	GNT#3
11	GNT#2	12	VCC3
13	REQ#2	14	GNT#1
15	REQ#1	16	VCC3
17	GNT#0	18	NC
19	VCC	20	VCC
21	SERIRQ	22	REQ#0
23	AD0	24	VCC3
25	AD1	26	AD2
27	AD4	28	AD3
29	AD6	30	AD5
31	CBE#0	32	AD7
33	AD8	34	AD9
35	GND	36	GND
37	AD10	38	AUXAL
39	AD11	40	MIC
41	AD12	42	AUXAR
43	AD13	44	ASVCC
45	AD14	46	SNDL
47	AD15	48	ASGND
49	CBE#1	50	SNDR

XTX CPU Module**XTX-945GSE**

51	VCC	52	VCC
53	PAR	54	SERR#
55	PERR#	56	NC
57	PME#	58	USB2-
59	LOCK#	60	DEVSEL#
61	TRDY#	62	USB3-
63	IRDY#	64	STOP#
65	FRAME#	66	USB2+
67	GND	68	GND
69	AD16	70	CBE#2
71	AD17	72	USB3+
73	AD19	74	AD18
75	AD20	76	USB0-
77	AD22	78	AD21
79	AD23	80	USB1-
81	AD24	82	CBE#3
83	VCC	84	VCC
85	AD25	86	AD26
87	AD28	88	USB0+
89	AD27	90	AD29
91	AD30	92	USB1+
93	PCIRST#	94	AD31
95	INTC#	96	INTD#
97	INTA#	98	INTB#
99	GND	100	GND

2.7 XTX Connector (X1B)

Pin	Signal	Pin	Signal
1	GND	2	GND
3	PCIE_CLK	4	SATA_RXP0
5	PCIE_CLK#	6	SATA_RXN0
7	GND	8	GND
9	PCIE_TXP3	10	SATA_TXN0
11	PCIE_TXN3	12	SATA_TXP0
13	GND	14	5V_SB
15	PCIE_RXP3	16	SATA_RXP1
17	PCIE_RXN3	18	SATA_RXN1
19	VCC	20	5V_SB
21	NC	22	SATA_TXN1
23	EXC1_RST#	24	SATA_TXP1
25	USB5+	26	GND
27	USB5-	28	SATA_RXP2
29	GND	30	SATA_RXN2
31	PCIE_TXP2	32	PM_SUS_STAT#
33	PCIE_TXN2	34	PM_CLKRUN#
35	GND	36	GND
37	PCIE_RXP2	38	SATA_TXN2
39	PCIE_RXN2	40	SATA_TXP2
41	NC	42	GND
43	EXC0_RST#	44	SATA_RXP3
45	USB4+	46	SATA_RXN3
47	USB4-	48	NC
49	PM_SLP_S3#	50	SATA_LED#

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51	VCC	52	VCC
53	PCIE_RXN1	54	SATA_TXN3
55	PCIE_RXP1	56	SATA_TXP3
57	GND	58	NC
59	PCIE_TXN1	60	NC
61	PCIE_TXP1	62	PM_THRM#
63	PCIE_WAKE#	64	NC
65	SLP_S5#	66	NC
67	GND	68	GND
69	PCIE_RXN0	70	NC
71	PCIE_RXP0	72	NC
73	GND	74	VCC
75	PCIE_TXN0	76	FAN_TAC2
77	PCIE_TXP0	78	FAN_CTL2
79	NC	80	VCC
81	ACZ_RST#	82	ACZ_SDOUT
83	VCC	84	VCC
85	ACZ_SYNC	86	ACZ_SDIN0
87	ACZ_SDIN1	88	ACZ_SDIN2
89	ACZ_BITCLK	90	FAN_TAC1
91	LPC_AD0	92	FAN_CTL1
93	LPC_AD1	94	LPC_FRAME#
95	LPC_AD2	96	LPC_DRQ0#
97	LPC_AD3	98	LPC_DRQ1#
99	GND	100	GND

2.8 XTX Connector (X1C)

Pin	Signal	Pin	Signal
1	GND	2	GND
3	R	4	B
5	HSY	6	G
7	VSY	8	DDCK
9	NC	10	DDDA
11	TX2CLK#	12	TX2OUT#3
13	TX2CLK	14	TX2OUT3
15	GND	16	GND
17	TX2OUT1	18	TX2OUT2
19	TX2OUT#1	20	TX2OUT#2
21	GND	22	GND
23	TX1OUT#3	24	TX2OUT0
25	TX1OUT3	26	TX2OUT#0
27	GND	28	GND
29	TX1OUT#2	30	TX1CLK
31	TX1OUT2	32	TX1CLK#1
33	GND	34	GND
35	TX1OUT0	36	TX1OUT1
37	TX1OUT#0	38	TX1OUT#1
39	VCC	40	VCC
41	JILI_DAT	42	NC
43	JILI_CLK	44	BLON#
45	BIASON / HSYNC	46	DIGON
47	COMP	48	TV_Y
49	NC	50	TV_C

XTX CPU Module**XTX-945GSE**

51	NC	52	NC
53	VCC	54	GND
55	STB#	56	AFDX
57	NC	58	PD7
59	IRRX	60	ERRX
61	IRTX	62	PD6
63	RXD2	64	INIT#
65	GND	66	GND
67	RTS#2	68	PD5
69	DTR#2	70	SLIN#
71	DCD#2	72	PD4
73	DSR#2	74	PD3
75	CTS#2	76	PD2
77	TXD2	78	PD1
79	RI#2	80	PD0
81	VCC	82	VCC
83	RXD1	84	ACK#
85	RTS#1	86	BUSY
87	DTR#1	88	PE
89	DCD#1	90	SLCT
91	DSR#1	92	MSCLK
93	CTS#1	94	MSDAT
95	TXD1	96	KBCLK
97	RI#1	98	KBDAT
99	GND	100	GND

2.9 XTX Connector (X1D)

Pin	Signal	Pin	Signal
1	GND	2	GND
3	5V_SB	4	PWGIN
5	PS_ON	6	SPEAKER
7	PWRBTN#	8	BATT
9	NC	10	LILED
11	NC	12	ACTLED
13	NC	14	SPEEDLED
15	EXT_PRG	16	NC
17	VCC	18	VCC
19	OVCR#	20	NC
21	NC	22	NC
23	SMBCLK	24	SMBDAT
25	SIDE_CS3#	26	NC
27	SIDE_CS1#	28	NC
29	SIDE_A2	30	PIDE_CS3#
31	SIDE_A0	32	PIDE_CS1#
33	GND	34	GND
35	PDIAG_S	36	PIDE_A2
37	SIDE_A1	38	PIDE_A0
39	SIDE_INTRQ	40	PIDE_A1
41	NC	42	NC
43	SIDE_ACK#	44	PIDE_INTRQ
45	SIDE_RDY	46	PIDE_ACK#
47	SIDE_IOR#	48	PIDE_RDY
49	VCC	50	VCC

XTX CPU Module**XTX-945GSE**

51	SIDE_IOW#	52	PIDE_IOR#
53	SIDE_DRQ	54	PIDE_IOW#
55	SIDE_D15	56	PIDE_DRQ
57	SIDE_D0	58	PIDE_D15
59	SIDE_D14	60	PIDE_D0
61	SIDE_D1	62	PIDE_D14
63	SIDE_D13	64	PIDE_D1
65	GND	66	GND
67	SIDE_D2	68	PIDE_D13
69	SIDE_D12	70	PIDE_D2
71	SIDE_D3	72	PIDE_D12
73	SIDE_D11	74	PIDE_D3
75	SIDE_D4	76	PIDE_D11
77	SIDE_D10	78	PIDE_D4
79	SIDE_D5	80	PIDE_D10
81	VCC	82	VCC
83	SIDE_D9	84	PIDE_D5
85	SIDE_D6	86	PIDE_D9
87	SIDE_D8	88	PIDE_D6
89	GPE#2	90	CBLID_P#
91	RXD-	92	PIDE_D8
93	RXD+	94	SIDE_D7
95	TXD-	96	PIDE_D7
97	TXD+	98	HDRST#
99	GND	100	GND

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	×	○	○	○	○	○
<p>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 SJ/T 11363-2006 标准规定的限量要求以下。</p> <p>X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。</p> <p>备注: 此产品所标示之环保使用期限, 系指在一般正常使用状况下。</p>						

Chapter

3

**Award
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. Non-fatal error messages usually appear on the screen along with the following instructions:

Press <F1> to RESUME

Write down the message and press the F1 key to continue the boot up sequence.

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 XTX-945GSE 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 Award BIOS Setup

Awards 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 immediately. This will allow you to enter Setup.

Standard CMOS Features

Use this menu for basic system configuration. (Date, time, IDE, etc.)

Advanced BIOS Features

Use this menu to set the advanced features available on your system.

Advanced Chipset Features

Use this menu to change the values in the chipset registers and optimize your system performance.

Integrated Peripherals

Use this menu to specify your settings for integrated peripherals. (Primary slave, secondary slave, keyboard, mouse etc.)

Power Management Setup

Use this menu to specify your settings for power management. (HDD power down, power on by ring etc.)

PnP/PCI Configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

This menu shows you the status of PC.

Frequency/Voltage Control

This menu shows you the display of frequency/Voltage Control.

Load Fail-Safe Defaults

Use this menu to load the BIOS default values for the minimal/stable performance for your system to operate.

Load Optimized Defaults

Use this menu to load the BIOS default values that are factory settings for optimal performance system operations. While AWARD has designated the custom BIOS to maximize performance, the factory has the right to change these defaults to meet their needs.

Set Supervisor/User Password

Use this menu to set Supervisor/User Passwords.

Save and Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

For more detailed information, you can refer to the "AAEON BIOS Item Description.pdf" file in the CD for the meaning of each setting in this chapter.

Chapter

4

**Driver
Installation**

The XTX-945GSE comes with a CD-ROM that contains all drivers and utilities that meet your needs.

Follow the sequence below to install the drivers:

- Step 1 – Install INF Driver
- Step 2 – Install VGA Driver
- Step 3 – Install LAN Driver
- Step 4 – Install Audio Driver
- Step 5 – Install Touch Panel Driver
- Step 6 – Install TPM Driver

USB 2.0 Drivers are available for download using Windows Update for both Windows XP and Windows 2000. For additional information regarding USB 2.0 support in Windows XP and Windows 2000, please visit www.microsoft.com/hwdev/usb/.

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the XTX-945 CD-ROM into the CD-ROM Drive. And install the drivers from Step 1 to Step 6 in order.

Step 1 – Install INF Driver

1. Click on the **Step 1 - INF** folder and then 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 2 – Install VGA Driver

1. Click on the **Step 2 - VGA** folder and select the folder of OS your system is
2. Double click on the **Setup.exe** file
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 **Step 3 - LAN** folder and double click on the **PRO2KXP.exe**
2. Follow the instructions that the window shows
3. The system will help you install the driver automatically

Step 4 – Install Audio Driver

1. Click on the **Step 4 - Audio** folder and select the folder of OS your system is
2. Double click on the **.exe** file

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

Step 5 – Install LAN Driver

1. Click on the **Step 5 – Touch Panel** 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 TPM Driver

1. Click on the **Step 6 – TPM** 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

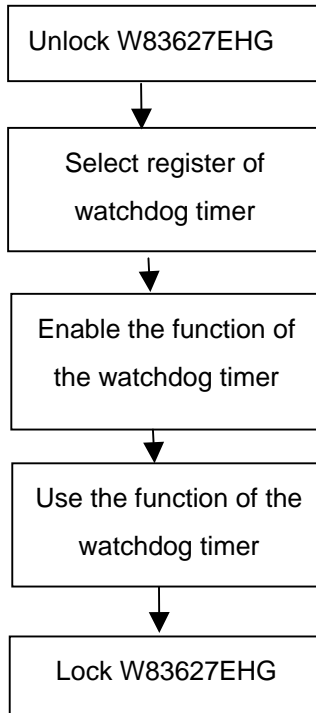
Programming the Watchdog Timer

A.1 Programming

XTX-945GSE utilizes W83627EHG 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 W83627EHG config Mode

- (2) Modify the data of configuration registers
- (3) Exit the W83627EHG config Mode. Undesired result may occur if the config Mode is not exited normally.

(1) Enter the W83627EHG config Mode

To enter the W83627EHG 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 W83627EHG 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 mode register. Default 0 x 00)

Bit 7-6 : select PLED mode

= 00 Power LED pin is tri-stated.

- = 01 Power LED pin is driven low.
- = 10 Power LED pin is a 1Hz toggle pulse with 50 duty cycle.
- = 11 Power LED pin is a 1/4Hz toggle pulse with 50 duty cycle.

Bit 5-4 : Reserved

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 1-0 : 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 W83627EHG Watchdog Timer Initial Program

Example: Setting 10 sec. as Watchdog timeout interval

;/;;;

Mov dx,2eh ;Enter W83627EHG 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 W83627EHG config mode
Mov al,0aah           (out 0aah to 2eh once)
Out dx,al
;/////////////////////////////////////////////////////////////////

```

Appendix

B

I/O Information

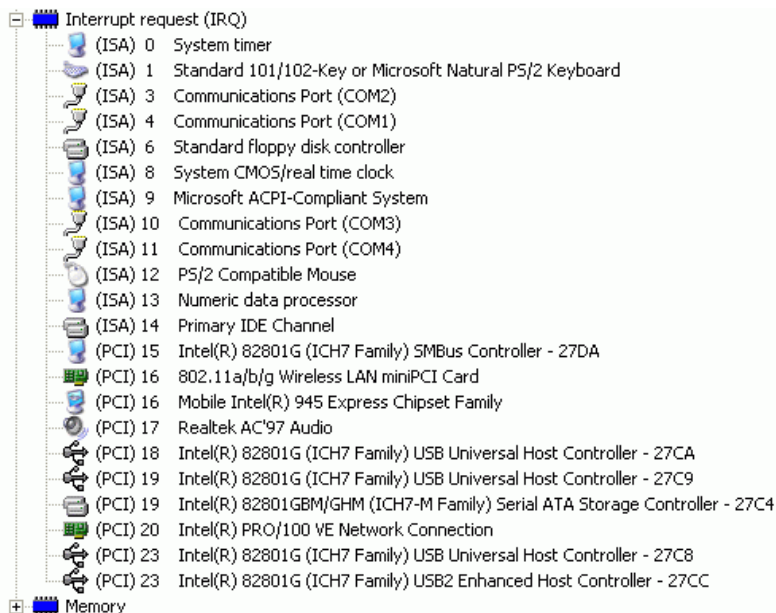
B.1 I/O Address Map

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 - 0000004D]	Motherboard resources
[0000004E - 0000004F]	Infineon Trusted Platform Module
[00000050 - 0000005E]	Motherboard resources
[00000060 - 00000060]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000061 - 00000061]	System speaker
[00000062 - 00000063]	Motherboard resources
[00000064 - 00000064]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000065 - 0000006F]	Motherboard resources
[00000070 - 00000073]	System CMOS/real time clock
[00000074 - 0000007F]	Motherboard resources
[00000080 - 00000090]	Direct memory access controller
[00000091 - 00000093]	Motherboard resources
[00000094 - 0000009F]	Direct memory access controller
[000000A0 - 000000A1]	Programmable interrupt controller
[000000A2 - 000000BF]	Motherboard resources
[000000C0 - 000000DF]	Direct memory access controller
[000000E0 - 000000EF]	Motherboard resources
[000000F0 - 000000FF]	Numeric data processor
[000001F0 - 000001F7]	Primary IDE Channel
[00000274 - 00000277]	ISAPNP Read Data Port
[00000279 - 00000279]	ISAPNP Read Data Port
[00000294 - 00000297]	Motherboard resources
[000002E8 - 000002EF]	Communications Port (COM4)
[000002F8 - 000002FF]	Communications Port (COM2)
[00000378 - 0000037F]	Printer Port (LPT1)
[000003B0 - 000003BB]	Mobile Intel(R) 945 Express Chipset Family
[000003C0 - 000003DF]	Mobile Intel(R) 945 Express Chipset Family
[000003E8 - 000003EF]	Communications Port (COM3)
[000003F0 - 000003F5]	Standard floppy disk controller
[000003F6 - 000003F6]	Primary IDE Channel
[000003F7 - 000003F7]	Standard floppy disk controller
[000003F8 - 000003FF]	Communications Port (COM1)
[00000400 - 000004BF]	Motherboard resources
[000004D0 - 000004D1]	Motherboard resources
[00000500 - 0000051F]	Intel(R) 82801G (ICH7 Family) SMBus Controller - 27DA
[00000778 - 0000077B]	Printer Port (LPT1)
[00000880 - 0000088F]	Motherboard resources
[00000A78 - 00000A7B]	Motherboard resources
[00000B78 - 00000B7B]	Motherboard resources
[00000B8C - 00000B8F]	Motherboard resources
[00000D00 - 0000FFFF]	PCI bus
[00000E78 - 00000E7B]	Motherboard resources
[00000F78 - 00000F7B]	Motherboard resources
[00000FBC - 00000FBF]	Motherboard resources
[00004700 - 0000470B]	Infineon Trusted Platform Module
[00000F00 - 0000DF3F]	Intel(R) PRO/100 VE Network Connection
[0000F000 - 0000F0FF]	Realtek AC'97 Audio
[0000F300 - 0000F30F]	Intel(R) 82801 GBM/GHM (ICH7-M Family) Serial ATA Storage Controller - 27C4
[0000F400 - 0000F403]	Intel(R) 82801 GBM/GHM (ICH7-M Family) Serial ATA Storage Controller - 27C4
[0000F500 - 0000F507]	Intel(R) 82801 GBM/GHM (ICH7-M Family) Serial ATA Storage Controller - 27C4
[0000F600 - 0000F603]	Intel(R) 82801 GBM/GHM (ICH7-M Family) Serial ATA Storage Controller - 27C4
[0000F700 - 0000F707]	Intel(R) 82801 GBM/GHM (ICH7-M Family) Serial ATA Storage Controller - 27C4
[0000F800 - 0000F80F]	Intel(R) 82801G (ICH7 Family) Ultra ATA Storage Controllers - 27DF
[0000FA00 - 0000FA3F]	Realtek AC'97 Audio
[0000FC00 - 0000FC1F]	Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27CA
[0000FD00 - 0000FD1F]	Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C9
[0000FE00 - 0000FE1F]	Intel(R) 82801G (ICH7 Family) USB Universal Host Controller - 27C8
[0000FF00 - 0000FF07]	Mobile Intel(R) 945 Express Chipset Family

B.2 1st MB Memory Address Map

Address Range	Device
[00000000 - 0009FFFF]	System board
[000A0000 - 000BFFFF]	Mobile Intel(R) 945 Express Chipset Family
[000A0000 - 000BFFFF]	PCI bus
[000C0000 - 000DFFFF]	PCI bus
[000E0000 - 000EFFFF]	System board
[000F0000 - 000FFFFF]	System board
[00100000 - 1F6DFFFF]	System board
[1F6E0000 - 1F6FFFFF]	System board
[1F750000 - FEBFFFFF]	PCI bus
[D0000000 - DFFFFFFF]	Mobile Intel(R) 945 Express Chipset Family
[E0000000 - EFFFFFFF]	Motherboard resources
[FDCF0000 - FDCF7FFF]	802.11a/b/g Wireless LAN miniPCI Card
[FDCF0000 - FDCF7FFF]	Intel(R) PRO/100 VE Network Connection
[FDF00000 - FDF7FFFF]	Mobile Intel(R) 945 Express Chipset Family
[FDF80000 - FDFBFFFF]	Mobile Intel(R) 945 Express Chipset Family
[FDFFC000 - FDFFC3FF]	Intel(R) 82801GBM/GHM (ICH7-M Family) Serial ATA Storage Controller - 27
[FDFFD000 - FDFFD0FF]	Realtek AC'97 Audio
[FDFFE000 - FDFFE1FF]	Realtek AC'97 Audio
[FDFFF000 - FDFFF3FF]	Intel(R) 82801G (ICH7 Family) USB2 Enhanced Host Controller - 27CC
[FEB80000 - FEBFFFFF]	Mobile Intel(R) 945 Express Chipset Family
[FEC00000 - FEC00FFF]	System board
[FED13000 - FED1DFFF]	System board
[FED20000 - FED3FFFF]	System board
[FED40000 - FED44FFF]	Infineon Trusted Platform Module
[FED40000 - FED44FFF]	PCI bus
[FED45000 - FED8FFFF]	System board
[FEE00000 - FEE00FFF]	System board
[FFB00000 - FFB7FFFF]	System board
[FFB80000 - FFBFFFFF]	Intel(R) 82802 Firmware Hub Device
[FFF00000 - FFFFFFFF]	System board

B.3 IRQ Mapping Chart



B.4 DMA Channel Assignments

