

XTX-U15B

Onboard Intel® Atom™ Z530/Z510
Processor

With LCD, Ethernet, PCI, PCI-E,
SDIO, LPC, SMBus, I2C
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-U15B 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.

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Chapter

1

**General
Information**

1.1 Introduction

XTX-U15B is able to equip with Intel® Atom™ Z530/Z510 processor and has one 200-pin DDR2 400/533 SODIMM to support system memory up to 2GB. XTX-U15B adopts Intel® System controller Hub US15W chipset that implements serial technologies with high performance. In addition, XTX-U15B accommodates user-friendly expansion interfaces, ex: 8-bit SDIO, 1 PCI-Express[x1] (or optional four PCI-Express[x1]), four 32-bit PCI, one LPC, and one SMBus interface.

For the display specifications, XTX-U15B integrates Intel® System Controller Hub US15W and shared system memory is up to 256MB. The display of XTX-U15B supports up to 24-bit single channel LVDS LCD. Moreover, 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Compared to the ETX modules, the ISA bus has been replaced by SATA and PCI-Express interfaces on XTX modules.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-U15B definitely is your first choice.

1.2 Features

- Onboard Intel® Atom™ Z530/Z510 Processor
- Intel® System Controller Hub US15W
- SODIMM DDR2 400/533 Memory, Max. 2GB
- 10/100Base-TX Ethernet
- Up to 24-bit Single Channel LVDS LCD, SDVO Connector
- AC97 2.3 Codec 2CH Audio
- PATA SSD (Up to 4 GB) x 1, SATA I x 2 or PATA x 1
- USB2.0 x 6, Micro SD Connector
- PCI-Express[x1] x 1 (x 4 Optional)
- +5V Only Operation

1.3 Specifications

System

- CPU Onboard Intel® Atom™ Z530/ Z510 Processor
Z530: 1.6 GHz, FSB 533 MHz
Z510: 1.1 GHz, FSB 400 MHz
- Memory 200-pin DDR2 SODIMM x 1, Max. 2 GB (DDR2 400/533)
- Chipset Intel® System Controller Hub US15W
- Ethernet Realtek RTL 8139DL (default)/ Intel® 82551IT, 10/100Base-TX
- BIOS Award, PLCC type, 1MB ROM
- Watchdog Timer Generates a Time-out System Reset
- H/W Status Monitoring Supports Power Supply Voltages, Fan Speed and Temperatures Monitoring
- Expansion Interface 8-bit SDIO
PCI-Express[x1] x 1 (x 4 optional)
32-bit PCI x 4
LPC interface x 1
SMBus x 1
- Battery Lithium battery
- Power Supply Voltage +5V DC
- Power Consumption Intel® Atom™ Z530 1.6GHz, DDR2 667 2GB

- 0.26A @ +12V, 2.9A @ +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) 113,000

Display: Supports LCD/DVI or LCD/LCD (vis SDVO) simultaneous/ dual view displays

- Chipset Intel® System Controller Hub US15W integrated
- Memory Shared system memory up to 256 MB
- Resolution Up to 1336x768 @ 85 Hz (Max. pixel clock of 112 MHz) for LVDS
Up to 1280x1024 @ 85 Hz (Max. pixel clock of 160 MHz) for SDVO
- LCD Interface Up to 24-bit single channel LVDS
- SDVO Port SDVO port x 1

I/O

- Storage PATA SSD onboard (Master device),
Max. 4 GB (For TF-XTX-U15-A10-02)
PATA x 1 (one device), SATA I x 1
- Serial Port 2

XTX CPU Module**XTX-U15B**

- Parallel Port 1
- USB USB2.0 x 6
- PS/2 Port Keyboard x 1, Mouse x 1

Chapter

2

**Quick
Installation
Guide**

2.1 Safety Precautions

Warning!

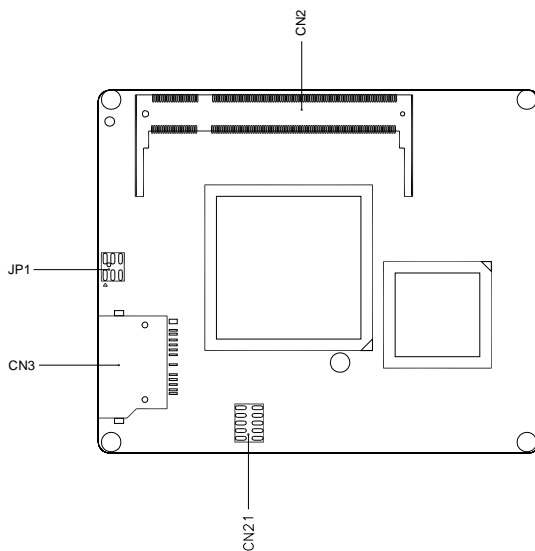
Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Caution!

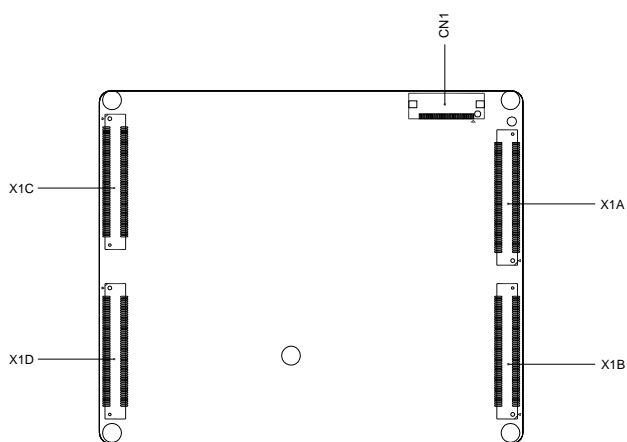
Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not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

2.2 Location of Connectors and Jumpers

Component Side

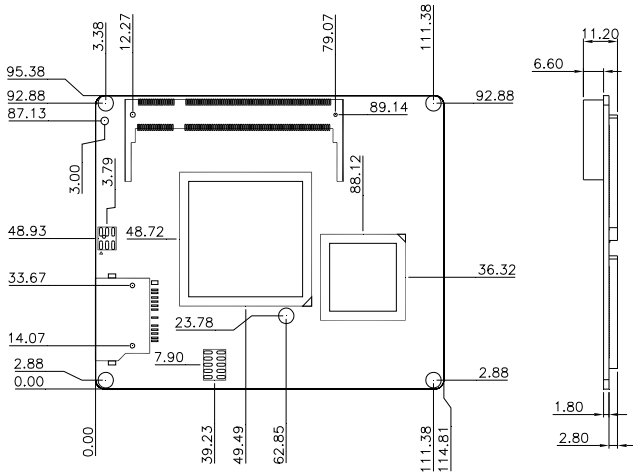


Solder Side

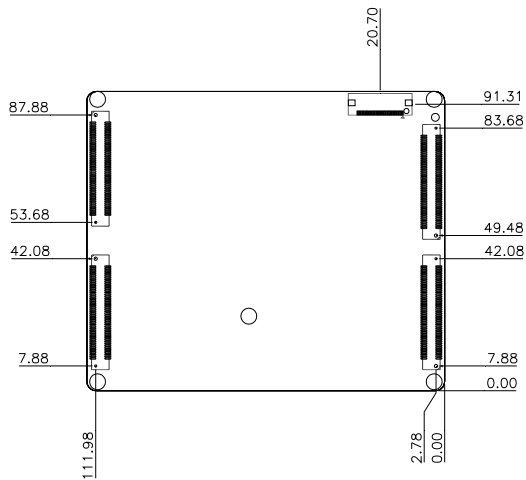


2.3 Mechanical Drawing

Component Side



Solder Side



2.4 List of Jumpers and Connectors

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

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

Label	Function
JP1	AT Mode & Back Light Selection
CN1	SDVO Extension Slot
CN2	DDR2 SODIMM Slot
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

2.5 AT Mode & Back Light Selection (JP1)

Auto Power Bottom Selection

JP1	Function
1-3	Auto Mode
3-5	Non Support-(Default)

Back Light Selection

JP1	Function
2-4	High Enable
4-6	Low Enable (Default)

2.6 SDVO Expansion Slot (CN1)

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

2.7 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
51	VCC	52	VCC

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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

2.8 XTX Connector (X1B)

Pin	Signal	Pin	Signal
1	GND	2	GND

XTX CPU Module**XTX-U15B**

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#
51	VCC	52	VCC
53	PCIE_RXN1	54	SATA_TXN3
55	PCIE_RXP1	56	SATA_TXP3
57	GND	58	NC

XTX CPU Module**XTX-U15B**

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

2.9 XTX Connector (X1C)

Pin	Signal	Pin	Signal
1	GND	2	GND
3	R	4	B
5	HSY	6	G
7	VSX	8	DDCK

XTX CPU Module**XTX-U15B**

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
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#

XTX CPU Module**XTX-U15B**

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

2.10 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

XTX CPU Module**XTX-U15B**

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
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

XTX CPU Module**XTX-U15B**

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-U15B 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-U15B 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 USB Client Driver
- Step 4 – Install Touch Panel Driver
- Step 5 – Install LAN Driver
- Step 6 – Install Audio Driver

Please read instructions below for further detailed installations.

4.1 Installation:

Insert the XTX-U15B 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 select the folder of OS your system is
2. Double click on the **infinst_autol.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 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 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 USB Client Driver

1. Click on the **Step 3 – USB Client** folder and select the folder of 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 4 – Install Touch Panel Driver

1. Click on the **Step 4 – 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 5 – Install LAN Driver

When install the Realtek LAN driver,

1. Click on the **Step 5 - Realtek 8139 LAN driver** 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

When install the Intel® LAN driver,

1. Click on **Start** button
2. Click on **Settings** button
3. Click on **Control Panel** button
4. Click on **System** button
5. Select **Hardware** and click on **Device Manager...**
6. Double click on **LAN Controller**
7. Click on **Update Driver...**
8. Click on **Next**
9. Select **Specify a location**, then click on **Next**
10. Click on **Browse**
11. Select **Intel 82551IT LAN driver** from CD-ROM
(Driver/Step 5 - Intel 82551IT LAN driver\WindowsXP)

then click on **Open**

12. Click on **OK**
13. Click on **Next**
15. Click on **Finish**

Step 6 – Install Audio Driver

1. Click on the **Step 6 – Audio** 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-U15B utilizes SCH3114-NU chipset as its watchdog timer controller.

The SCH311X WDT (Watch Dog Timer) has a programmable time-out ranging from 1 to 255 minutes with one minute resolution, or 1 to 255 second resolution. The unit of the WDT timeout value are selected via bit[7] of the WDT_TIMEOUT register. The WDT time-out value is set through the WDT_VAL Runtime register.

Setting The WDT_VAL register to 0x00 disables the WDT function (this is its power on default).

Setting the WDT_VAL to any other non-zero value will cause the WDT to reload and begin counting down from the value loaded.

When the WDT count value reaches zero the counter stops and sets the Watchdog time-out status bit in the WDT_CTRL Runtime register. Note: Regardless of the current state of the WDT, the WDT time-out status bit can be directly set or cleared by the Host CPU.

The related register for configuring WDT is list as follows:

NAME	REG OFFSET (HEX)	DESCRIPTION
GP60 Default = 0x01 on VTR POR	47 (R/W)	General Purpose I/O bit 6.0 Bit[0] In/Out : =1 Input, =0 Output Bit[1] Polarity : =1 Invert, =0 No Invert Bit[3:2] Alternate Function Select 11=WDT 10=Either Edge Triggered Interrupt Input 4 (Note 26.20) 01=ED1 00=GPIO Bits[6:4] Reserved Bit[7] Output Type Select 1=Open Drain 0=Push Pull

<p>WDT_TIME_OUT</p> <p>Default = 0x00 on VCC POR, VTR POR, and PCI Reset</p>	<p>65</p> <p>(R/W)</p>	<p>Watch-dog Timeout</p> <p>Bit[0] Reserved</p> <p>Bit[1] Reserved</p> <p>Bits[6:2] Reserved, = 00000</p> <p>Bit[7] WDT Time-out Value Units Select</p> <p>= 0 Minutes (default)</p> <p>= 1 Seconds</p>
<p>WDT_VAL</p> <p>Default = 0x00 on VCC POR, VTR POR, and PCI Reset</p>	<p>66</p> <p>(R/W)</p>	<p>Watch-dog Timer Time-out Value</p> <p>Binary coded, units = minutes (default) or seconds, selectable via Bit[7] of WDT_TIME_OUT register (0x52).</p> <p>0x00 Time out disabled</p> <p>0x01 Time-out = 1 minute (second)</p> <p>.....</p> <p>0xFF Time-out = 255 minutes (seconds)</p>

NAME	REG OFFSET (HEX)	DESCRIPTION
<p>WDT_CFG</p> <p>Default = 0x00 on VCC POR, VTR POR, and PCI Reset</p>	<p>67</p> <p>(R/W)</p>	<p>Watch-dog timer Configuration</p> <p>Bit[0] Reserved</p> <p>Bit[1] Keyboard Enable</p> <p>= 1 WDT is reset upon a Keyboard interrupt.</p> <p>= 0 WDT is not affected by Keyboard interrupts.</p> <p>Bit[2] Mouse Enable</p> <p>= 1 WDT is reset upon a Mouse interrupt.</p> <p>= 0 WDT is not affected by Mouse interrupts.</p> <p>Bit[3] Reserved</p> <p>Bits[7:4] WDT Interrupt Mapping</p> <p>1111 = IRQ15</p> <p>.....</p> <p>0011 = IRQ3</p> <p>0010 = IRQ2 (Note)</p> <p>0001 = IRQ1</p> <p>0000 = Disable</p> <p>Note: IRQ2 is used for generating SMI events via the serial IRQ's stream. The WDT should not be configured for IRQ2 if the IRQ2 slot is enabled for generating an SMI event.</p>
<p>WDT_CTRL</p> <p>Default = 0x00 on VCC POR and VTR POR</p> <p>Default = 000000xb on PCI Reset</p> <p>Note: Bit[0] is not cleared by PCI Reset</p>	<p>68</p> <p>(R/W)</p> <p>Bit[2] is Write-Only</p>	<p>Watch-dog timer Control</p> <p>Bit[0] Watch-dog Status Bit, R/W</p> <p>= 1 WD timeout occurred</p> <p>= 0 WD timer counting</p> <p>Bit[1] Reserved</p> <p>Bit[2] Force Timeout, W</p> <p>= 1 Forces WD timeout event; this bit is self-clearing</p> <p>Bit[3] P20 Force Timeout Enable, R/W</p> <p>= 1 Allows rising edge of P20, from the Keyboard Controller, to force the WD timeout event. A WD timeout event may still be forced by setting the Force Timeout Bit, bit 2.</p> <p>Note: If the P20 signal is high when the enable bit is set a WD timeout event will be generated.</p> <p>= 0 P20 activity does not generate the WD timeout event.</p> <p>Note: The P20 signal will remain high for a minimum of 1us and can remain high indefinitely. Therefore, when P20 forced timeouts are enabled, a self-clearing edge-detect circuit is used to generate a signal which is OR'ed with the signal generated by the Force Timeout Bit.</p> <p>Bit[7:4] Reserved. Set to 0</p>

The following is a sample code to set WDT for 3 seconds.

```

;Runtime register I/O base address
SUPERIO_GPIO_PORT    EQU    800h
.MODEL    SMALL
.CODE

begin:
    ;enable WDT
        mov dx, SUPERIO_GPIO_PORT + 47h
        mov al, 0Ch
        out dx, al
    ;WDT_TIME_OUT register
        mov dx, SUPERIO_GPIO_PORT + 65h
        mov al, 80h                ;unit is second
        out dx, al
    ;WDT_VAL register
        mov dx, SUPERIO_GPIO_PORT + 66h
        mov al, 03h                ;3 seconds
        out dx, al
    ;exit
        mov ah,4ch
        int 21h

        END begin

```


Appendix

B

I/O Information

B.1 I/O Address Map

Address Range	Device Name
[00000000 - 0000000F]	Direct memory access controller
[00000000 - 00000CF7]	PCI bus
[00000010 - 0000001F]	Motherboard resources
[00000020 - 00000021]	Programmable interrupt controller
[00000022 - 0000003F]	Motherboard resources
[00000040 - 00000043]	System timer
[00000044 - 0000005F]	Motherboard resources
[00000060 - 00000060]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000061 - 00000061]	System speaker
[00000062 - 00000063]	Motherboard resources
[00000064 - 00000064]	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
[00000065 - 0000006F]	Motherboard resources
[00000070 - 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
[00000170 - 00000177]	Secondary IDE Channel
[000001F0 - 000001F7]	Primary IDE Channel
[00000274 - 00000277]	ISAPNP Read Data Port
[00000279 - 00000279]	ISAPNP Read Data Port
[000002F8 - 000002FF]	Communications Port (COM2)
[00000376 - 00000376]	Secondary IDE Channel
[00000378 - 0000037F]	Printer Port (LPT1)
[000003B0 - 000003BB]	Intel(R) Graphics Media Accelerator 500
[000003C0 - 000003DF]	Intel(R) Graphics Media Accelerator 500
[000003F6 - 000003F6]	Primary IDE Channel
[000003F8 - 000003FF]	Communications Port (COM1)
[000004D0 - 000004D1]	Motherboard resources
[00000800 - 0000087F]	Motherboard resources
[00000880 - 0000088F]	Motherboard resources
[00000900 - 000009BF]	Motherboard resources
[00000A79 - 00000A79]	ISAPNP Read Data Port
[00000D00 - 0000FFFF]	PCI bus
[0000A000 - 0000AFFF]	PCI standard PCI-to-PCI bridge
[0000A000 - 0000AFFF]	PCI standard PCI-to-PCI bridge
[0000AF00 - 0000AF3F]	Intel(R) 8255xER PCI Adapter
[0000B000 - 0000BFFF]	PCI standard PCI-to-PCI bridge
[0000B000 - 0000EFFF]	PCI standard PCI-to-PCI bridge
[0000B000 - 0000EFFF]	PCI standard PCI-to-PCI bridge
[0000C000 - 0000CFFF]	PCI standard PCI-to-PCI bridge
[0000D000 - 0000DFFF]	PCI standard PCI-to-PCI bridge
[0000E000 - 0000EFFF]	PCI standard PCI-to-PCI bridge
[0000F800 - 0000FB0F]	Standard Dual Channel PCI IDE Controller
[0000FC00 - 0000FC1F]	Standard Universal PCI to USB Host Controller
[0000FD00 - 0000FD1F]	Standard Universal PCI to USB Host Controller
[0000FE00 - 0000FE1F]	Standard Universal PCI to USB Host Controller
[0000FF00 - 0000FF07]	Intel(R) Graphics Media Accelerator 500

B.2 1st MB Memory Address Map

Memory	
[00000000 - 0009FFFF]	System board
[000A0000 - 000BFFFF]	Intel(R) Graphics Media Accelerator 500
[000A0000 - 000BFFFF]	PCI bus
[000C0000 - 000DFFFF]	PCI bus
[000E0000 - 000EFFFF]	PCI bus
[000E0000 - 000EFFFF]	System board
[000F0000 - 000FFFFF]	PCI bus
[000F0000 - 000FFFFF]	System board
[00100000 - 1F6DFFFF]	System board
[1F6E0000 - 1F6FFFFF]	System board
[1F700000 - 1F7FFFFF]	System board
[1F800000 - FEBFFFFF]	PCI bus
[D8000000 - DFFFFFFF]	Intel(R) Graphics Media Accelerator 500
[E0000000 - EFFFFFFF]	Motherboard resources
[FD400000 - FD4FFFFF]	PCI standard PCI-to-PCI bridge
[FD400000 - FD4FFFFF]	PCI standard PCI-to-PCI bridge
[FD500000 - FD5FFFFF]	PCI standard PCI-to-PCI bridge
[FD500000 - FD5FFFFF]	PCI standard PCI-to-PCI bridge
[FD5C0000 - FD5DFFFF]	Intel(R) 825xER PCI Adapter
[FD5FF000 - FD5FFFFF]	Intel(R) 825xER PCI Adapter
[FD600000 - FD6FFFFF]	PCI standard PCI-to-PCI bridge
[FD600000 - FD99FFFF]	PCI standard PCI-to-PCI bridge
[FD600000 - FD99FFFF]	PCI standard PCI-to-PCI bridge
[FD700000 - FD7FFFFF]	PCI standard PCI-to-PCI bridge
[FD800000 - FD8FFFFF]	PCI standard PCI-to-PCI bridge
[FD900000 - FD9FFFFF]	PCI standard PCI-to-PCI bridge
[FDA00000 - FDAFFFFF]	PCI standard PCI-to-PCI bridge
[FDA00000 - FDDFFFFF]	PCI standard PCI-to-PCI bridge
[FDA00000 - FDEFFFFF]	PCI standard PCI-to-PCI bridge
[FDB00000 - FDBFFFFF]	PCI standard PCI-to-PCI bridge
[FDC00000 - FDCFFFFF]	PCI standard PCI-to-PCI bridge
[FDD00000 - FDDFFFFF]	PCI standard PCI-to-PCI bridge
[FDEE0000 - FDEFFFFF]	PCI standard PCI-to-PCI bridge
[FDF00000 - FDF7FFFF]	Intel(R) Graphics Media Accelerator 500
[FDFC0000 - FDFDFFFF]	Intel(R) Graphics Media Accelerator 500
[FDFF4000 - FDFF7FFF]	Microsoft UAA Bus Driver for High Definition Audio
[FDFFB000 - FDFFB0FF]	SDA Standard Compliant SD Host Controller
[FDFFC000 - FDFFC0FF]	SDA Standard Compliant SD Host Controller
[FDFFD000 - FDFFD0FF]	SDA Standard Compliant SD Host Controller
[FDFFE000 - FDFFE3FF]	Standard Enhanced PCI to USB Host Controller
[FDFF0000 - FDFFFFFF]	Intel(R) USB Client Ethernet Device
[FEC00000 - FEC00FFF]	System board
[FED00000 - FED000FF]	System board
[FED00000 - FED003FF]	High precision event timer
[FED13000 - FED1DFFF]	System board
[FED20000 - 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

Interrupt request (IRQ)	
(ISA) 0	High precision event timer
(ISA) 1	Standard 101/102-Key or Microsoft Natural PS/2 Keyboard
(ISA) 3	Communications Port (COM2)
(ISA) 4	Communications Port (COM1)
(ISA) 8	High precision event timer
(ISA) 9	Microsoft ACPI-Compliant System
(ISA) 12	PS/2 Compatible Mouse
(ISA) 13	Numeric data processor
(ISA) 14	Primary IDE Channel
(PCI) 16	Intel(R) 8255xER PCI Adapter
(PCI) 16	Intel(R) Graphics Media Accelerator 500
(PCI) 16	Intel(R) USB Client Ethernet Device
(PCI) 16	Microsoft UAA Bus Driver for High Definition Audio
(PCI) 16	PCI standard PCI-to-PCI bridge
(PCI) 16	PCI standard PCI-to-PCI bridge
(PCI) 16	PCI standard PCI-to-PCI bridge
(PCI) 16	SDA Standard Compliant SD Host Controller
(PCI) 17	PCI standard PCI-to-PCI bridge
(PCI) 17	PCI standard PCI-to-PCI bridge
(PCI) 17	SDA Standard Compliant SD Host Controller
(PCI) 18	PCI standard PCI-to-PCI bridge
(PCI) 18	SDA Standard Compliant SD Host Controller
(PCI) 19	PCI standard PCI-to-PCI bridge
(PCI) 19	Standard Enhanced PCI to USB Host Controller
(PCI) 19	Standard Universal PCI to USB Host Controller
(PCI) 19	Standard Universal PCI to USB Host Controller
(PCI) 19	Standard Universal PCI to USB Host Controller

B.4 DMA Channel Assignments

Direct memory access (DMA)	
4	Direct memory access controller

Appendix

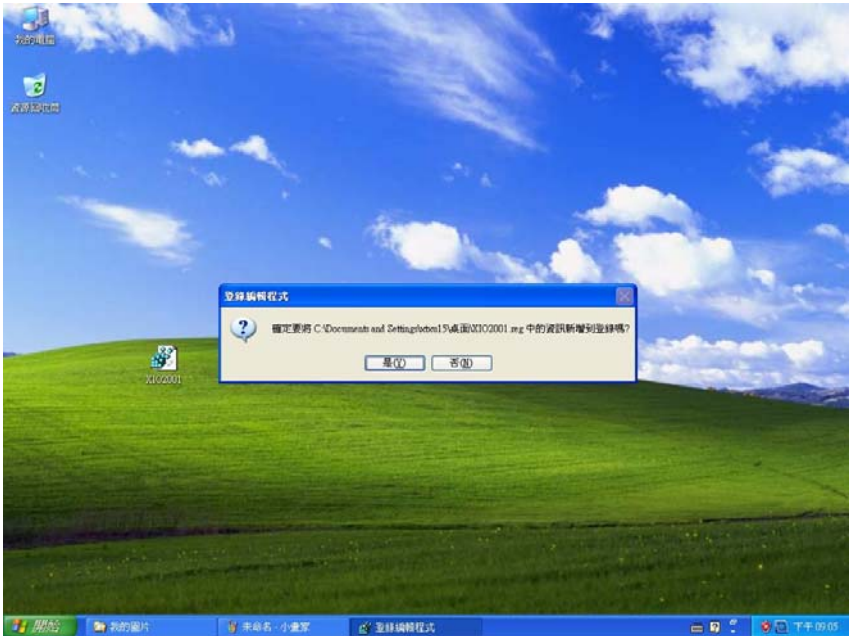
C

Running The Path File

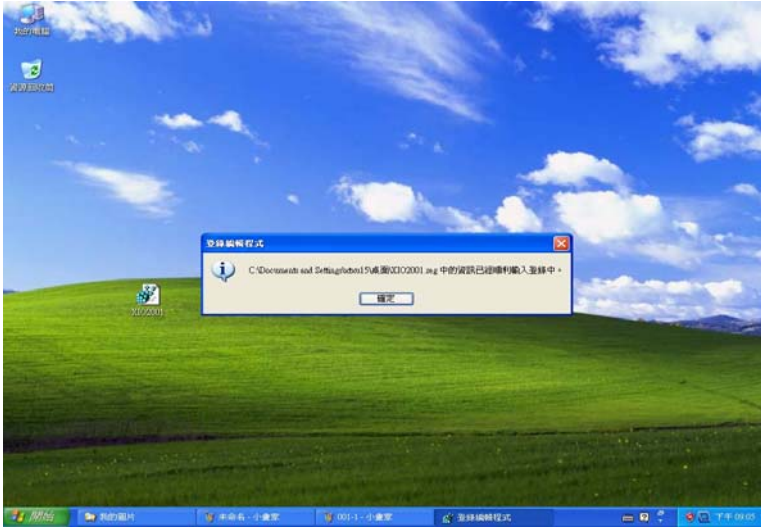
C.1 Running the Path File

Before shutting down the Windows XP system during 1st operation after installing this OS, you need to run the path file of XIO2001.reg, and then the system can be shutted down properly. Please refer to the attached photos.

Run XIO2001.reg



Finish XIO2001.reg



Shut Down the Windows XPE

