

## BOXER-6404M

Fanless Embedded Box PC

User's Manual 1<sup>st</sup> Ed

#### Copyright Notice

This document is copyrighted, 2016. All rights are reserved. The original manufacturer reserves the right to make improvements to the products described in this manual at any time without notice.

No part of this manual may be reproduced, copied, translated, or transmitted in any form or by any means without the prior written permission of the original manufacturer. Information provided in this manual is intended to be accurate and reliable. However, the original manufacturer assumes no responsibility for its use, or for any infringements upon the rights of third parties that may result from its use.

The material in this document is for product information only and is subject to change without notice. While reasonable efforts have been made in the preparation of this document to assure its accuracy, AAEON assumes no liabilities resulting from errors or omissions in this document, or from the use of the information contained herein.

AAEON reserves the right to make changes in the product design without notice to its

users.

#### Acknowledgement

All other products' name or trademarks are properties of their respective owners.

- Microsoft Windows is a registered trademark of Microsoft Corp.
- Intel, Pentium, Celeron, and Xeon are registered trademarks of Intel Corporation
- Atom is a trademark of Intel Corporation
- ITE is a trademark of Integrated Technology Express, Inc.
- IBM and VGA are trademarks of International Business Machines Corporation.

All other product names or trademarks are properties of their respective owners.

#### Packing List

Before setting up your product, please make sure the following items have been shipped:

Item		Quantity
•	BOXER-6404M	1
•	Power adapter	1
•	Product DVD with User's Manual (in pdf) and drivers	1

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

This User's Manual contains all the essential information, such as detailed descriptions and explanations on the product's hardware and software features (if any), its specifications, dimensions, jumper/connector settings/definitions, and driver installation instructions (if any), to facilitate users in setting up their product.

Users may refer to the AAEON.com for the latest version of this document.

#### Safety Precautions

Please read the following safety instructions carefully. It is advised that you keep this manual for future references

- 1. All cautions and warnings on the device should be noted.
- All cables and adapters supplied by AAEON are certified and in accordance with the material safety laws and regulations of the country of sale. Do not use any cables or adapters not supplied by AAEON to prevent system malfunction or fires.
- 3. Make sure the power source matches the power rating of the device.
- 4. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- Always completely disconnect the power before working on the system's hardware.
- No connections should be made when the system is powered as a sudden rush of power may damage sensitive electronic components.
- If the device is not to be used for a long time, disconnect it from the power supply to avoid damage by transient over-voltage.
- 8. Always disconnect this device from any AC supply before cleaning.
- 9. While cleaning, use a damp cloth instead of liquid or spray detergents.
- 10. Make sure the device is installed near a power outlet and is easily accessible.
- 11. Keep this device away from humidity.
- 12. Place the device on a solid surface during installation to prevent falls
- 13. Do not cover the openings on the device to ensure optimal heat dissipation.
- 14. Watch out for high temperatures when the system is running.
- 15. Do not touch the heat sink or heat spreader when the system is running
- 16. Never pour any liquid into the openings. This could cause fire or electric shock.

- As most electronic components are sensitive to static electrical charge, be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and contain all electronic components in any static-shielded containers.
- 18. If any of the following situations arises, please the contact our service personnel:
  - i. Damaged power cord or plug
  - ii. Liquid intrusion to the device
  - iii. Exposure to moisture
  - Device is not working as expected or in a manner as described in this manual
  - v. The device is dropped or damaged
  - vi. Any obvious signs of damage displayed on the device

19. DO NOT LEAVE THIS DEVICE IN AN UNCONTROLLED ENVIRONMENT WITH TEMPERATURES BEYOND THE DEVICE'S PERMITTED STORAGE TEMPERATURES (SEE CHAPTER 1) TO PREVENT DAMAGE.



This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

#### Caution:

There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions and your local government's recycling or disposal directives.

#### Attention:

Il y a un risque d'explosion si la batterie est remplacée de façon incorrecte. Ne la remplacer qu'avec le même modèle ou équivalent recommandé par le constructeur. Recycler les batteries usées en accord avec les instructions du fabricant et les directives gouvernementales de recyclage.

#### China RoHS Requirements (CN)

产品中有毒有害物质或元素名称及含量

AAEON Embedded Box PC/ Industrial System

			有毒	有害物质或	成元素	
部件名称	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
	(Pb)	(Hg)	(Cd)	(Cr(VI))	(PBB)	(PBDE)
印刷电路板						0
及其电子组件	0	0	0	0	0	0
外部信号						
连接器及线材	0	0	0	0	O	O
外壳	0	0	0	0	0	0
中央处理器						0
与内存	0	0	0	0	0	0
硬盘	0	0	0	0	0	0
电源	0	0	0	0	0	0
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 11363-20067	际准规定	的限重要	<b>要</b> 求以下。	2		
X: 表示该有毒有害物	质至少在	E该部件	的某一均	质材料中的	向含量超出	
SJ/T 11363-2006	标准规定	的限量引	要求。			

备注:

一、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。

二、上述部件物质中央处理器、内存、硬盘、电源为选购品。

#### China RoHS Requirement (EN)

Poisonous or Hazardous Substances or Elements in Products

AAEON Embedded Box PC/ Industrial System

	Poisonous or Hazardous Substances or Elements							
Component	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr(VI))	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)		
PCB & Other Components	0	0	0	0	0	0		
Wires & Connectors for External Connections	0	ο	0	0	0	0		
Chassis	0	0	0	0	0	0		
CPU & RAM	0	0	0	0	0	0		
Hard Disk	0	0	0	0	0	0		
PSU	0	0	0	0	0	0		

O: The quantity of poisonous or hazardous substances or elements found in each of the component's parts is below the SJ/T 11363-2006-stipulated requirement.

X: The quantity of poisonous or hazardous substances or elements found in at least one of the component's parts is beyond the SJ/T 11363-2006-stipulated requirement.

Note: The Environment Friendly Use Period as labeled on this product is applicable under normal usage only

## Table of Contents

Chapter	·1-P	Product Spec	cifications	1
1.	.1 9	Specificatior	NS	2
Chapter	·2-H	Hardware In	formation	4
2.	.1 [	Dimensions		5
2.	.2 l	_ist of Jump	ers	6
	2	2.2.1	Clear CMOS Jumper (JP12, pin 1,3,5)	7
	4	2.2.2	Auto Power Button Enable/ Disable Selection (JP12, pin 2,4	,6)
				7
	2	2.2.3	Push Power Button with Orange LED (SW1)	7
2.	.3 l	_ist of Conn	ectors	8
	2	2.3.1	COM Port RS-232 (CN1)	9
	2	2.3.2	+12 V Input (CN2)	9
	2	2.3.3	LAN (RJ-45) Port 1,2,3,4 (JP3,4,5,6)	10
	2	2.3.4	+5 V Output for SATA HDD (CN7)	10
	2	2.3.5	SATA Port (CN8)	11
	4	2.3.6	DDR3L SO-DIMM Slot (CN9)	11
	4	2.3.7	C-FAST Card Connector (CN11)	11
	4	2.3.8	MiniCard Slot (CN13) (USB Port2 Only)	12
	2	2.3.9	Battery (CN14)	14
	4	2.3.10	USB 3.0 Port 0 (CN17)	15
	4	2.3.11	USB 2.0 Port 1, 3 (CN18,19)	15
	4	2.3.12	HDMI Port 1, 2 (CN20,21)	16
	4	2.3.13	LPC Port (CN22)	17
	4	2.3.14	SPI Programming Header (CN23)	17
2.	.4 I	installing DR	AM	19
2.	.5 I	installing HD	)D	21

Chapte	er 3 -	AMI BIOS Se	tup		. 24	
	3.1	System Test	and Ini	itialization	25	
	3.2	AMI BIOS Setup				
	3.3	Setup Subm	ienu: N	lain	27	
	3.4	Setup Subm	ienu: A	dvanced	28	
		3.4.1	Advar	nced: ACPI Settings	.29	
		3.4.2	Advar	nced: F81801 Super IO Configuration	.31	
		3.4.2.	1	Super IO Configuration: Serial Port 1 Configuration.	.32	
		3.4.3	Advar	nced: H/W Monitor	.33	
		3.4.4	Advar	nced: CPU Configuration	.34	
		3.4.4.	1	CPU Configuration: Socket 0 CPU Information	.35	
		3.4.5	Advar	nced: SATA Configuration	.36	
		3.4.6	Advar	nced: USB Configuration	.38	
	3.5	Setup subm	enu: Cl	hipset	.40	
		3.5.1	Chipse	et: North Bridge	.41	
		3.5.2	Chipse	et: South Bridge	.42	
		3.5.2.	1	South Bridge: USB Configuration (Default Setting)	.43	
	3.6	Security			.44	
	3.7	Setup subm	enu: Bo	pot	.45	
	3.8	Setup subm	enu: Sa	ave & Exit	.46	
Chapte	er 4 –	Drivers Insta	llation.		. 47	
	4.1	Product CD,	/DVD		.48	
Appen	ndix A	- Watchdog	Timer	Programming	. 50	
	A.1	Watchdog T	ïmer Ir	itial Program	.51	
	A.2	Watchdog S	ample	Program	.52	
Appen	ndix B	- I/O Informa	ation		. 55	
	B.1	I/O Address	Map		.56	
	B.2	Memory Ad	ldress N	Иар	58	

	B.3	IRQ Mapping Chart	59
Appe	ndix C	- Electrical Specifications for I/O Ports	70
	C.1	Electrical Specifications for I/O Ports	71

# Chapter 1

Product Specifications

## 1.1 Specifications

• Pro	ocessor		Intel <sup>®</sup> Atom™ N2807/ Celeron® J1900
● Sy	stem Memo	ry	204-pin DDR3L 1333 SODIMM x 1, Up to 8 GB (2 GB Pre-installed)
• Ch	nipset		-
Displ	ау	HDMI	HDMI x 2
Interf	ace		
• Stora	age	CF-SATA	CFast™ x 1
Devic	æ	HDD/SSD	2.5" HDD/SSD bay x 1
Netv	vork	LAN	Gigabit Ethernet
		Wireless	Optional
• Fron	t I/O	USB Host	USB 2.0 x 2, USB 3.0 x 1
		LAN	_
		Serial Port	_
		DIO	_
		Audio	_
		KB/MS	_
		Others	Power On/Off button x 1, HDMI x 2
• Rear	I/O	USB Host	_
		LAN	RJ-45 x 4
		Serial Port	RS-232 x 1
		DIO	—
		Audio	—
		KB/MS	—
		Others	_
• Expa	Insion	PCIe	_

		PCI	_
		MiniCard	Half MiniCard x 1 (USB Only)
		Mini PCI	_
		Others	_
•	Power Requirem	ent	12 V DC-in with lockable connector
			ATX mode (optional AT by jumper/ BIOS
			setting)
•	System Cooling		Passive cooling
•	Mounting		Wall-mount
•	Dimension (W x	(HxD)	166 x 106.6 x 52 mm (6.5 x 4.2 x 2.05")
•	OS Support		Windows <sup>®</sup> Embedded Standard 8 32/64-bit,
			Windows <sup>®</sup> Embedded Standard 7 32/64-bit,
			Windows <sup>®</sup> 10 32/64-bit
			Windows <sup>®</sup> 8.1 32/64-bit
			Windows <sup>®</sup> 7 32/64-bit
			Linux by Fedora kernel 2.6.3 up
•	Certification	EMC	CE/FCC Class A
		Safety	_
•	Operating Tem	nperature	-30~ 75°C (-22 ~ 167°F) with 0.5 m/s airflow
			(HDD)
•	Storage Tempe	erature	-30 ~ 80°C (-22 ~ 176°F)
•	Anti-Vibration		5 Grms/ 5~500 Hz/ operation (CFast)
			1 Grms/ 5~500 Hz/ operation (HDD)
•	Anti-Shock		50 G peak acceleration (11 msec. duration) –
•	EMC		(CFast) CE/FCC Class A

## Chapter 2

Hardware Information

#### 2.1 Dimensions



#### 2.2 List of Jumpers

Please refer to the table below for all of the system's jumpers that you can configure for your application

Label	Function
JP12 (1,3,5)	Clear CMOS Jumper
JP12 (2,4,6)	Auto Power Button Enable/ Disable Selection
SW1	Push Power Button with Orange LED

#### 2.2.1 Clear CMOS Jumper (JP12, pin 1,3,5)

1		2
3		4
5	α	6

Normal (Default)



Clear CMOS

#### 2.2.2 Auto Power Button Enable/ Disable Selection (JP12, pin 2,4,6)

1		0	2
3		•	4
5			6
	9	_	

Enable

1		2
3	0	4
5	•	6

Disable (Default)

#### 2.2.3 Push Power Button with Orange LED (SW1)





Pin	Pin Name	Signal Type	Signal Level
L1	+V5S	IN	+5V
L2	GND	GND	GND
1	NC		
2	PWRBTN#	OUT	
3	GND	GND	GND
4	NC		
5	NC		
6	NC		

#### 2.3 List of Connectors

Please refer to the table below for all of the system's connectors that you can configure for your application

Label	Function
CN1	COM port RS-232
CN2	+12 V Input
CN3	LAN (RJ-45) Port
CN4	LAN (RJ-45) Port
CN5	LAN (RJ-45) Port
CN6	LAN (RJ-45) Port
CN7	+5V Output for SATA HDD
CN8	SATA Port
CN9	DDR3L SO-DIMM Slot
CN11	C-FAST CARD Connector
CN13	MiniCard Slot (USB2.0 port 2 ONLY)
CN14	Battery
CN17	USB3.0 port 0
CN18	USB2.0 port 3
CN19	USB2.0 port 1
CN20	HDMI1 Port
CN21	HDMI 2 Port
CN22	LPC Expansion Connector
CN23	SPI Programming Header

.

## 2.3.1 COM Port RS-232 (CN1)



Pin	Pin Name	Signal Type	Signal Level
1	DCD	IN	
2	RX	IN	
3	ТХ	OUT	±9V
4	DTR	OUT	±9V
5	GND	GND	
6	DSR	IN	
7	RTS	OUT	±9V
8	CTS	IN	
9	RI	IN	

## 2.3.2 +12 V Input (CN2)



Pin	Pin Name	Signal Type	Signal Level
1	+12 V	PWR	+12 V
2-3	GND	GND	

### 2.3.3 LAN (RJ-45) Port 1,2,3,4 (JP3,4,5,6)



Pin	Pin Name	Signal Type	Signal Level
C1	MDI0+	DIFF	
C2	MDI0-	DIFF	
C3	MDI1+	DIFF	
C4	MDI2+	DIFF	
C5	MDI2-	DIFF	
C6	MDI1-	DIFF	
С7	MDI3+	DIFF	
C8	MDI3-	DIFF	

## 2.3.4 +5 V Output for SATA HDD (CN7)



Pin	Pin Name	Signal Type	Signal Level
1	+V5S	PWR	+5V
2	GND	GND	

-

	Pin	 1 Pin 7	
Pin	Pin Name	Signal Type	Signal Level
1	GND	GND	
2	SATA_TXP1	DIFF	
3	SATA_TXN1	DIFF	
4	GND	GND	
5	SATA_RXN1	DIFF	
6	SATA_RXP1	DIFF	
7	GND	GND	

#### 2.3.6 DDR3L SO-DIMM Slot (CN9)

Standard Specification

#### 2.3.7 C-FAST Card Connector (CN11)

Pin	Pin Name	Signal Type	Signal Level
S1	GND	GND	
S2	SATA_TXP0	DIFF	
S3	SATA_TXN0	DIFF	
S4	GND	GND	
S5	SATA_RXN0	DIFF	
S6	SATA_RXP0	DIFF	
S7	GND	GND	

P1	NC		
P2	GND	GND	
P3	NC		
P4	NC		
P5	NC		
P6	NC		
P7	GND	GND	
P8	CFD_LED#	OUT	+3.3 V
P9	NC		
P10	NC		
P11	NC		
P12	NC		
P13	+V3.3S	PWR	+3.3 V
P14	+V3.3S	PWR	+3.3 V
P15	GND	GND	
P16	GND	GND	
P17	NC		

## 2.3.8 MiniCard Slot (CN13) (USB Port2 Only)

Pin	Pin Name	Signal Type	Signal Level
1	WAKE_PCIE0#_3P3	IN	
2	+V3.3A	PWR	+3.3 V
3	NC		
4	GND	GND	
5	NC		
6	+V1.5S	PWR	+1.5 V

7	NC	IN	
8	NC	PWR	
9	GND	GND	
10	NC	I/O	
11	NC	DIFF	
12	NC	IN	
13	NC	DIFF	
14	NC	IN	
15	GND	GND	
16	NC	PWR	
17	NC		
18	GND	GND	
19	NC		
20	WL_DISABLED0#	OUT	+3.3 V
21	GND	GND	
22	BUF_PLT_RST#	OUT	+3.3 V
23	NC	DIFF	
24	+V3.3A	PWR	+3.3 V
25	NC	DIFF	
26	GND	GND	
27	GND	GND	
28	+V1.5S	PWR	+1.5 V
29	GND	GND	
30	SMB_CLK_3P3_FA	I/O	+3.3 V
31	NC	DIFF	
32	SMB_DATA_3P3_FA	I/O	+3.3 V
33	NC	DIFF	

34	GND	GND	
35	GND	GND	
36	USB_DN2	DIFF	
37	GND	GND	
38	USB_DP2	DIFF	
39	+V3.3A	PWR	+3.3 V
40	GND	GND	
41	+V3.3A	PWR	+3.3 V
42	NC		
43	NC		
44	NC		
45	NC		
46	NC		
47	NC		
48	+V1.5S	PWR	+1.5 V
49	NC		
50	GND	GND	
51	NC		
52	+V3.3A	PWR	+3.3 V

## 2.3.9 Battery (CN14)



Pin	Pin Name	Signal Type	Signal Level
1	+3.3 V	PWR	3.3 V
2	GND	GND	

BOXER-6404M



Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5 V
2	USBO_D-	DIFF	
3	USB0_D+	DIFF	
4	GND	GND	
5	USBO_SSRX-	DIFF	
6	USB0_SSRX+	DIFF	
7	GND	GND	
8	USBO_SSTX-	DIFF	
9	USBO_SSTX+	DIFF	

#### 2.3.11 USB 2.0 Port 1, 3 (CN18,19)

Standard USB Connector



Pin	Pin Name	Signal Type	Signal Level
1	+5VSB	PWR	+5 V
2	USB1_D-	DIFF	
3	USB1_D+	DIFF	
4	GND	GND	



Pin	Pin Name	Signal Type	Signal Level
1	TMDS_DAT2+	DIFF	
2	GND	GND	
3	TMDS_DAT2-	DIFF	
4	TMDS_DAT1+	DIFF	
5	GND	GND	
6	TMDS_DAT1-	DIFF	
7	TMDS_DAT0+	DIFF	
8	GND	GND	
9	TMDS_DAT0-	DIFF	
10	TMDS_CLK+	DIFF	
11	GND	GND	
12	TMDS_CLK-	DIFF	
13	NC		
14	NC		
15	DDC_CLK	I/O	+5 V
16	DDC_DATA	I/O	+5 V
17	GND	GND	
18	+5V	I/O	+5 V
19	HPLG_DETECT	IN	

Pin	Pin Name	Signal Type	Signal Level
1	LAD0	I/O	+3.3 V
2	LAD1	I/O	+3.3 V
3	LAD2	I/O	+3.3 V
4	LAD3	I/O	+3.3 V
5	+V3.3S	PWR	+3.3 V
6	LFRAME#	IN	
7	LRESET#	OUT	+3.3 V
8	GND	GND	
9	LCLK	OUT	
10	LDRQ0	IN	
11	LDRQ1	IN	
12	SERIRO	I/O	+3.3 V

-02

1

LAD0 LAD1 LAD2

LAD2 LAD3 +3.3V LFRAME#

LRESET# GND LCLK LDRQ0 LDRQ1

SERIRQ

#### 2.3.14 SPI Programming Header (CN23)



Pin	Pin Name	Signal Type	Signal Level
1	SPI_SO_F	OUT	
2	GND	GND	
3	SPI_CLK_F	IN	
4	+V3.3A_SPI	PWR	+3.3 V
5	SPI_SI_F	IN	
6	SPI_CSO#_F	IN	
7	NC		

#### 2.4 Installing DRAM

1. Remove the screws as shown below



2. Slot in the RAM diagonally into the slot, push down to secure.



#### 3. Re-tighten the screws



#### 2.5 Installing HDD

1. Remove the screws as shown below



2. Attach the HDD bracket to the HDD with screws



3. Attach the assembled HDD to the underside of the cover with screws



4. Connect up the HDD using the cables below




# Chapter 3

AMI BIOS Setup

BOXER-6404N

#### 3.1 System Test and Initialization

The system uses certain routines to perform testing and initialization. If an error, fatal or non-fatal, is encountered, a few short beeps or an error message will be outputted. The board can usually continue the boot up sequence with non-fatal errors.

The system configuration verification routines check the current system configuration against the values stored in the CMOS memory. If they do not match, an error message will be outputted, in which case you will 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:

- You are starting your system for the first time
- You have changed your system's hardware
- The CMOS memory has lost power and the configuration information is erased

The system's CMOS memory uses a backup battery for data retention, which is to be replaced once emptied.

#### 3.2 AMI BIOS Setup

The AMI BIOS ROM has a pre-installed Setup program that allows users to modify basic system configurations, which is stored in the battery-backed CMOS RAM and BIOS NVRAM so that the information is retained when the power is turned off.

To enter BIOS Setup, press <Del> or <F2> immediately while your computer is powering up.

The function for each interface can be found below.

Main – Date and time can be set here. Press <Tab> to switch between date elements

Advanced – Enable/ Disable boot option for legacy network devices

Chipset - For hosting bridge parameters

Boot – Enable/ Disable quiet Boot Option

Security - The setup administrator password can be set here

Save & Exit – Save your changes and exit the program

#### 3.3 Setup Submenu: Main



## 3.4 Setup Submenu: Advanced

Main Advanced Chipset Security Boot Save & Exit	
<ul> <li>ACPI Settings</li> <li>F81801 Super IO Configuration</li> <li>Hardware Monitor</li> <li>CPU Configuration</li> <li>IDE Configuration</li> <li>USB Configuration</li> </ul>	System ACPI/ Power Mode/ Wake Event Configurations
	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

#### 3.4.1 Advanced: ACPI Settings

Aptio Setup Utility - Advanced	Copyright (C) 2012 American	Megatrends, Inc.
ACPI Settings		Select ACPI sleep state the system will enter when the
ACPI Sleep State Restore AC Power Loss Power Mode Wake on ring Wake system with Fixed Time	[S3 only(Suspend to] [Power Off] [ATX Type] [Disabled] [Disabled]	SUSPEND button is pressed.
Wake system with Dynamic Time	[Disabled]	
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help E2: Dervices Nature
		F2: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2 15 1229 Pr	nuright (P) 2012 American M	egatrends Inc

# Options summary:

ACPI Sleep State	Suspend Disabled		
	S3 (Suspend to RAM)	Optimal Default, Failsafe Default	
Select the highest A	CPI sleep state the system wi	ll enter when the SUSPEND button is	
pressed.			
Restore AC Power	Power Off	Optimal Default, Failsafe Default	
Loss	Power On		
	Last State		
Select AC power state when power is re-applied after a power failure			
Power Mode	АТХ Туре	Optimal Default, Failsafe Default	

	АТ Туре	
Select power supply	y mode	
Wake on Ring	Disabled	Optimal Default, Failsafe Default
	Enabled	
En/Disabled wake f	rom ring	
Wake system with	Disabled	
Fixed Time	Enabled	
Enable or disable S	ystem wake on alarm event. V	Vake up time is setting by following
settings.		
Wake up day	0-31	
Select 0 for daily sy	stem wake up	
Wake up hour	0-23	
Wake up minute	0-59	
Wake up second	0-59	
Wake system with	Disabled	
Dynamic Time	Enabled	
Enable or disable S	ystem wake on alarm event. V	/ake up time is current time + Increase
minutes.		
Wake up minute	1-5	
increase		

# 3.4.2 Advanced: F81801 Super IO Configuration

Aptio Setup Utility Advanced	∣ – Copyright (C) 2013 Ame	rican Megatrends, Inc.
F81801 Super IO Configuration		Set Parameters of Serial Port
Super IO Chip ▶ Serial Port 1 Configuration	F81801	
	I.	
		↔: Select Screen ↑: Select Item Enter: Select +/-: Change Opt. F1: General Help
		F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

#### Options summary:

SATA Mode	IDE Mode	
	AHCI Mode	Optimal Default, Failsafe Default

#### 3.4.2.1 Super IO Configuration: Serial Port 1 Configuration

	Aptio Setup Utility – C Advanced	Copyright	(C) 2013 American	Megatrends, Inc.
Serial	Port 1 Configuration			Enable or Disable Serial Port (COM)
Serial Device	Port Settings	[Enabled] IO=3F8h;	IRQ=4;	
Change	Settings	[Auto]		
				↔: Select Screen †∔: Select Item
				Enter: Select +/−: Change Opt. F1: General Heln
				F2: Previous Values F3: Optimized Defaults
				F4: Save & Exit ESC: Exit
	Version 2.16.1242. Cop	oyright (C	) 2013 American Me	egatrends, Inc.

Options summary:

Legacy USB Support	Enabled	Optimal Default, Failsafe Default		
	Disabled			
	Auto			
Enables BIOS Support for Lagas (LISP Support When enabled LISP can be functional				

Enables BIOS Support for Legacy USB Support. When enabled, USB can be functional in legacy environment like DOS.

AUTO option disables legacy support if no USB devices are connected

#### 3.4.3 Advanced: H/W Monitor

Aptio S Advanced	etup Utility – Copyright (C) 2012	American Megatrends, Inc.
Pc Health Status		Enable or Disable Smart Fan
CPU temperature Sustem temperature	:	
Vcore	:	
VMEM +3.3V	:	
3VSB VRAT	:	
VUTI	·	
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Versio	n 2 15 1229. Conuright (C) 2012 A	merican Megatrends Inc

Chapter 3 – AMI BIOS Setup

#### 3.4.4 Advanced: CPU Configuration

Aptio Setup Utility Advanced	– Copyright (C) 2013	American Megatrends, Inc.
CPU Configuration		Socket specific CPU Information
▶ Socket O CPU Information		
CPU Speed 64-bit	MHz Supported	
Intel Virtualization Technology	[Enabled]	
		++: Select Screen ↑↓: Select Item
		Enter: Select +/-: Change Opt.
		F1: General Help F2: Previous Values
		F3: Optimized Defaults
		ESC: Exit
Version 2.16.1242.	Copyright (C) 2013 An	merican Megatrends, Inc.

Options summary:

Intel Virtualization	Disabled			
Technology	Enabled	Optimal Default, Failsafe Default		
When enabled, a VMM can utilize the additional hardware capabilities provided by				

Vander pool Technology

## 3.4.4.1 CPU Configuration: Socket 0 CPU Information

Aptio Setup Advanced	Utility – Copy	yright (C) 20	13 American	Megatrends,	Inc.
Advanced Socket 0 CPU Information Intel(R) Celeron(R) CPU CPU Signature Microcode Patch Max CPU Speed Processor Cores Intel HT Technology Intel VT-x Technology L1 Data Cache L1 Code Cache L2 Cache L3 Cache				++: Select S ++: Select I Enter: Select +/-: Change F1: General F2: Previous F3: Optimize F4: Save & E ESC: Exit	Screen item it Opt. Help : Values d Defaults ixit
Version 2.	16.1242. Copyri	ight (C) 2013	American Me	gatrends. In	ic.

#### Options summary:

Power Mode	ATX Type	Optimal Default, Failsafe Default
	АТ Туре	
Select power supply	r mode.	
AC Power Loss	Last State	Optimal Default, Failsafe Default
	Power On	
	Power Off	
Select power state when power is re-applied after a power failure.		
RTC wake system	Disabled	Optimal Default, Failsafe Default
from S5	Fixed Time	
	Dynamic Time	
Enable or disable Sy	rstem wake on alarm event. V	Vhen enabled, System will wake on the
hr::min::sec specified	d	

#### 3.4.5 Advanced: SATA Configuration

Aptio Setup Utility - ) Advanced	Copyright (C) 2013 American	Megatrends, Inc.
IDE Configuration		Enable ∕ Disable Serial ATA
Serial-ATA (SATA)		
SATA Speed Support SATA Mode	[Gen2] [AHCI Mode]	
Serial-ATA Port O SATA PortO HotPlug SATA PortO	[Enabled] [Disabled]	
Not Prešent		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2 16 1242 Co	nuright (C) 2013 American M	evatrends Inc

# Options summary:

Serial-ATA (SATA)	Enabled	Default
	Disabled	
En/Disable SATA		
SATA Speed Support	Gen1	
	Gen2	Default
SATA Speed Support Gen1 or Gen2		
SATA Mode	IDE	
	AHCI	Default

IDE: Configure SATA controllers as legacy IDE			
AHCI: Configure SATA controllers to operate in AHCI mode			
Serial-ATA Port 0 Enabled Default			
	Disabled		
En/Disable SATA Port			
SATA Port1 HotPlug Enabled			
Disabled Default			
En/Disable SATA Port Hotplug			

#### 3.4.6 Advanced: USB Configuration

Aptio Setup Utility - Advanced	Copyright (C) 2013 American	Megatrends, Inc.
USB Configuration		Enables Legacy USB support.
USB Module Version	8.11.01	support if no USB devices are
USB Devices: 1 Drive, 1 Keyboard, 1 Mouse,	1 Hub	keep USB devices available only for EFI applications.
Legacy USB Support		
		++: Select Screen ↑↓: Select Item
		+/-: Change Opt. F1: General Help
		F2: Previous Values F3: Optimized Defaults
		F4: Save & Exit ESC: Exit

#### Options summary:

Legacy USB Support	Enabled	Optimal Default, Failsafe Default
	Disabled	
	Auto	
Enables BIOS Support for Legacy USB Support. When enabled, USB can be functional		
in legacy environment like DC	DS.	

AUTO option disables legacy support if no USB devices are connected

Auto

Device Name (Emulation

Optimal Default, Failsafe Default

Туре)	Floppy	
	Forced FDD	
	Hard Disk	
	CDROM	
If Auto. USB devices less than	530MB will be emu	lated as Floppy and remaining as

Floppy and remaining as hard drive. Forced FDD option can be used to force a HDD

formatted drive to boot as FDD(Ex. ZIP drive)



# 3.5.1 Chipset: North Bridge

Aptio Setup Util Chipset	ity – Copyright (C) 2012 Amer	rican Megatrends, Inc.
LCD Control		Select the Video Device which
Primary IGFX Boot Display	[VBIOS Default]	<pre>will be activated during POST. This has no effect if external graphics present. Secondary boot display selection will appear based on your selection. VGA modes will be supported only on primary display **: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2.15.12	29. Copyright (C) 2012 Americ	can Megatrends, Inc.

## Options summary:

Primary IGFX Boot Display	VBIOS Default	Optimal Default, Failsafe Default
	HDMI1	
	HDMI2	
Select the Video device		

# 3.5.2 Chipset: South Bridge

Aptio Setup Utility – Copyright (( <mark>Chipset</mark>	:) 2013 American Megatrends, Inc.
▶ USB Configuration	Azalia HD Audio Options
	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.16.1242. Copyright (C)	2013 American Megatrends, Inc.

#### 3.5.2.1 South Bridge: USB Configuration (Default Setting)



Chapter 3 – AMI BIOS Setup



Version 2.16.1242. Copyright (C) 2013 American Megatrends, Inc

#### Change User/Administrator Password

You can set a User Password once an Administrator Password is set. The password will be required during boot up, or when the user enters the Setup utility. Please Note that a User Password does not provide access to many of the features in the Setup utility.

Select the password you wish to set, press Enter to open a dialog box to enter your password (you can enter no more than six letters or numbers). Press Enter to confirm your entry, after which you will be prompted to retype your password for a final confirmation. Press Enter again after you have retyped it correctly.

#### Removing the Password

Highlight this item and type in the current password. At the next dialog box press Enter to disable password protection.

#### 3.7 Setup submenu: Boot

Aptio Setup Utility Main Advanced Chipset Security	– Copyright (C) 2013 Americar J Boot Save & Exit	n Megatrends, Inc.
Boot Configuration Quiet Boot PXE	[Enabled] [Do not launch]	Launch PXE Option Rom
Boot Option Priorities Boot Option #1 Boot Option #2 Boot Option #3 Hard Drive BBS Priorities	[UEFI: JetFlashTrans] [JetFlashTranscend 1] [UEFI: Built-in EFI]	
		<pre>+: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save &amp; Exit ESC: Exit</pre>
Version 2 16 1242	Convright (C) 2013 American N	Vegatrends, Toc.

#### Options summary:

Quiet Boot	Disabled	
	Enabled	Default
En/Disable showing boot logo.		
PXE	Do not launch	Default
	Enabled	
En/Disable PXE boot		

\* Only LAN1 and LAN2 supports PXE

## 3.8 Setup submenu: Save & Exit

Aptio Setup Utility – Copyright (C) 2012 American Main Advanced Chipset Boot Security <mark>Save &amp; Exit</mark>	Megatrends, Inc.
Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset	Exit system setup after saving the changes.
Save Options Save Changes Discard Changes	
Restore Defaults Save as User Defaults Restore User Defaults	
Boot Override Generic STORAGE DEVICE 9602 UEFI: Generic STORAGE DEVICE 9602	++: Select Screen fl: Select Item Enter: Select +/-: Change Ont
Launch EFI Shell from filesystem device	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2 15 1236 Conveight (C) 2012 American Me	wathends Inc

# Chapter 4

Drivers Installation

#### 4.1 Product CD/DVD

The BOXER-6404M comes with a product DVD that contains all the drivers and utilities you need to setup your product. Insert the DVD and follow the steps in the autorun program to install the drivers.

In case the program does not start, follow the sequence below to install the drivers.

#### Step 1 – Install Chipset Drivers

- 1. Open the Step 1 Chipset folder and select your OS
- 2. Open the SetupChipset.exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

#### Step 2 – Install Graphics Driver

- 1. Open the Step 2 VGA folder and select your OS
- 2. Open the Setup.exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

#### Step 3 – Install Network Driver

- 1. Open the Step 3 LAN folder and select your OS
- 2. Open the.exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

#### Step 4 – Install TXE Driver (Windows 8.1/10 only)

- 1. Open the Step 4 TXE folder and select your OS
- 2. Open the SetupTXE.exe file in the folder
- 3. Follow the instructions
- 4. Drivers will be installed automatically

#### Step 5 - Install USB 3.0 Drivers (Windows 7 only)

- 1. Open the Step 5 USB 3.0 followed by the Setup.exe file
- 2. Follow the instructions
- 3. Drivers will be installed automatically

#### Step 6 - Install MBI Drivers

- 1. Open the Step 6 MBI folder and select your OS
- 2. Open the Setup.exe file
- 3. Follow the instructions
- 4. Drivers will be installed automatically

# Appendix A

Watchdog Timer Programming

#### A.1 Watchdog Timer Initial Program

Table 1 : Watch dog relative IO address			
	Default Value	Note	
I/O Base Address	0xA00	I/O Base address for Watchdog operation. This address is assigned by SIO LDN7, register 0x60-0x61.	

Table 2 : Watchdog relative register table				
Register	Offset	BitNum	Value	Note
Watchdog WDTRST# Enable	0x00	7	1	Enable/Disable time out output via WDTRST# 0: Disable 1: Enable
Pulse Width	0x05	0:1	01	Width of Pulse signal 00: 1ms (do not use) 01: 25ms 10: 125ms 11: 5s <i>Pulse width is must longer</i> <i>then 16ms.</i>
Signal Polarity	0x05	2	0	0: low active 1: high active <i>Must set this bit to 0</i>
Counting Unit	0x05	3	0	Select time unit. 0: second 1: minute
Output Signal Type	0x05	4	1	0: Level 1: Pulse <i>Must set this bit to 1</i>
Watchdog Timer Enable	0x05	5	1	0: Disable 1: Enable
Timeout Status	0x05	6	1	1: timeout occurred. Write a 1 to clear timeout status
Timer Counter	0x06			Time of watchdog timer (0~255)

#### A.2 Watchdog Sample Program

```
*****
// WDT I/O operation relative definition (Please reference to Table 1)
#define WDTAddr 0xA00 // WDT I/O base address
Void WDTWriteByte(byte Register, byte Value);
byte WDTReadByte(byte Register);
Void WDTSetReg(byte Register, byte Bit, byte Val);
// Watch Dog relative definition (Please reference to Table 2)
              0x00 // Device configuration register
#define DevReg
   #define WDTRstBit 0x80 // Watchdog WDTRST# (Bit7)
   #define WDTRstVal 0x80 // Enabled WDTRST#
#define TimerRea
                 0x05 // Timer register
   #define PSWidthBit
                     0x00 // WDTRST# Pulse width (Bit0:1)
   #define PSWidthVal
                     0x01
                           // 25ms for WDTRST# pulse
   #define PolarityBit 0x02 // WDTRST# Signal polarity (Bit2)
   #define PolarityVal 0x00 // Low active for WDTRST#
   #define UnitBit
                   0x03
                          // Unit for timer (Bit3)
   #define ModeBit
                     0x04 // WDTRST# mode (Bit4)
                      0x01 // 0:level 1: pulse
   #define ModeVal
   #define EnableBit
                    0x05 // WDT timer enable (Bit5)
                    0x01
   #define EnableVal
                          // 1: enable
   #define StatusBit
                    0x06 // WDT timer status (Bit6)
#define CounterReg 0x06 // Timer counter register
VOID Main(){
    // Procedure : AaeonWDTConfig
    // (byte)Timer : Counter of WDT timer.(0x00~0xFF)
    // (boolean)Unit : Select time unit(0: second, 1: minute).
    AaeonWDTConfig(Counter, Unit);
    // Procedure : AaeonWDTEnable
     // This procudure will enable the WDT counting.
    AaeonWDTEnable();
    ******
// Procedure : AaeonWDTEnable
```

# Fanless Embedded Box PC

}

}

VOID AaeonWDTEnable (){ WDTEnableDisable(1);

// Procedure : AaeonWDTConfig

// Disable WDT counting
WDTEnableDisable(0);

WDTClearTimeoutStatus(); // WDT relative parameter setting WDTParameterSetting(Timer, Unit);

VOID WDTEnableDisable(byte Value){ If (Value == 1)

VOID AaeonWDTConfig (byte Counter, BOOLEAN Unit){

WDTSetBit(TimerReg, EnableBit, 1);

// Clear Watchdog Timeout Status

BOXFR-6404

else WDTSetBit( <b>TimerReg, EnableBit</b> , 0); }	
<pre>VOID WDTParameterSetting(byte Counter, BOOLEAN Unit){     // Watchdog Timer counter setting     WDTWriteByte(CounterReg, Counter);     // WDT counting unit setting     WDTSetBit(TimerReg, UnitBit, Unit);     // WDT output mode set to pulse     WDTSetBit(TimerReg, ModeBit, ModeVal);     // WDT output mode set to active low     WDTSetBit(TimerReg, PolarityBit, PolarityVal);     // WDT output pulse width is 25ms     WDTSetBit(TimerReg, PSWidthBit, PSWidthVal);     // Watchdog WDTRST# Enable     WDTSetBit(DevReg, WDTRstBit, WDTRstVal); }</pre>	
VOID <b>WDTClearTimeoutStatus()</b> { WDTSetBit( <b>TimerReg</b> , <b>StatusBit</b> , 1); }	*****
***************************************	******

#### VOID WDTWriteByte(byte Register, byte Value){ IOWriteByte(WDTAddr+Register, Value);

#### byte WDTReadByte(byte Register){ return IOReadByte(WDTAddr+Register);

VOID WDTSetBit(byte Register, byte Bit, byte Val){ byte TmpValue;

> TmpValue = WDTReadByte(Register); TmpValue &= ~(1 << Bit); TmpValue |= Val << Bit; WDTWriteByte(Register, TmpValue);

}

}

}

# Appendix B

I/O Information

# B.1 I/O Address Map

✓ Input/output (IO)

יי כ	
Ŧ	
D	
ב	
ב	

Note: There is no PS/2 interface on the BOXER-6404M, hence the exclamation marks.

j,	[00000000 - 0000006F]	PCI Express Root Complex
j,	[00000020 - 00000021]	Programmable interrupt controller
, 🜉	[00000024 - 00000025]	Programmable interrupt controller
j,	[00000028 - 00000029]	Programmable interrupt controller
<u>به</u> ر	[0000002C - 0000002D]	Programmable interrupt controller
j,	[0000002E - 0000002F]	Motherboard resources
j,	[00000030 - 00000031]	Programmable interrupt controller
),	[00000034 - 00000035]	Programmable interrupt controller
j,	[00000038 - 00000039]	Programmable interrupt controller
), 🛄	[0000003C - 0000003D]	Programmable interrupt controller
<u>به</u> ر	[00000040 - 00000043]	System timer
<u>به</u> ر	[0000004E - 0000004F]	Motherboard resources
1	[00000050 - 00000053]	System timer
-	[00000060 - 00000060]	Standard PS/2 Keyboard
),	[00000061 - 00000061]	Motherboard resources
1	[00000063 - 00000063]	Motherboard resources
-	[00000064 - 00000064]	Standard PS/2 Keyboard
1	[00000065 - 00000065]	Motherboard resources
1	[00000067 - 00000067]	Motherboard resources
1	[00000070 - 00000070]	Motherboard resources
j,	[00000070 - 00000077]	System CMOS/real time clock
1	[00000078 - 00000CF7]	PCI Express Root Complex
1	[00000080 - 0000008F]	Motherboard resources
1	[00000092 - 00000092]	Motherboard resources
1	[000000A0 - 000000A1]	Programmable interrupt controller
1	[000000A4 - 000000A5]	Programmable interrupt controller
1	[000000A8 - 000000A9]	Programmable interrupt controller
<u>به</u> ر	[000000AC - 000000AD	<ol> <li>Programmable interrupt controller</li> </ol>
<u>به</u> ر	[000000B0 - 000000B1]	Programmable interrupt controller
<u>به</u> ر	[000000B2 - 000000B3]	Motherboard resources
1	[000000B4 - 000000B5]	Programmable interrupt controller
1	[000000B8 - 000000B9]	Programmable interrupt controller
1	[000000BC - 000000BD]	] Programmable interrupt controller
Ţ	[000002C8 - 000002CF]	Communications Port (COM10)
Ţ	[000002D8 - 000002DF]	Communications Port (COM9)
	[000003B0 - 000003BB]	Intel(R) HD Graphics
	[000003C0 - 000003DF]	Intel(R) HD Graphics
Ţ	[000003F8 - 000003FF]	Communications Port (COM1)
<u>به</u> ر	[00000400 - 0000047F]	Motherboard resources

- 🜉 [000004D0 000004D1] Programmable interrupt controller
- [00000500 000005FE] Motherboard resources
- [00000600 0000061F] Motherboard resources
- [00000680 0000069F] Motherboard resources
- 🜉 [00000A00 00000A0F] Motherboard resources
- 🜉 [00000A10 00000A1F] Motherboard resources
- 🜉 [00000D00 0000FFFF] PCI Express Root Complex
- 🜉 [0000B000 0000BFFF] Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express Root Port 4 0F4E
- 👰 [0000C000 0000CFFF] Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express Root Port 3 0F4C
- 👰 [0000D000 0000DFFF] Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express Root Port 2 0F4A
- 🜉 [0000E000 0000EFFF] Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express Root Port 1 0F48
- 🜉 [0000F000 0000F01F] Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor Platform Control Unit SMBus Port 0F12
- Note: [0000F080 0000F087] Intel(R) HD Graphics

#### B.2 Memory Address Map

	Me	mory
_		[000A0000 - 000BFFFF] Intel(R) HD Graphics
	,Ē	[000A0000 - 000BFFFF] PCI Express Root Complex
	, E	[000C0000 - 000DFFFF] PCI Express Root Complex
	, 🜉	[000E0000 - 000FFFFF] PCI Express Root Complex
		[C0000000 - CFFFFFF] Intel(R) HD Graphics
	,Ē	[C0000000 - D0A16FFF] PCI Express Root Complex
	<b>.</b>	[D0000000 - D03FFFFF] Intel(R) HD Graphics
	, E	[D0400000 - D04FFFFF] Intel(R) Trusted Execution Engine Interface
	j,	[D0500000 - D05FFFFF] Intel(R) Trusted Execution Engine Interface
	2	[D0600000 - D061FFFF] Intel(R) I211 Gigabit Network Connection
	j,	[D0600000 - D06FFFFF] Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 4 - 0F4E
	•	[D0620000 - D0623FFF] Intel(R) I211 Gigabit Network Connection
	¢.	[D0700000 - D071FFFF] Intel(R) I211 Gigabit Network Connection #2
	j,	[D0700000 - D07FFFFF] Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 3 - 0F4C
	j,	[D0710000 - D0713FFF] High Definition Audio Controller
	¢.	[D0720000 - D0723FFF] Intel(R) I211 Gigabit Network Connection #2
	P	[D0800000 - D081FFFF] Intel(R) I211 Gigabit Network Connection #3
	<u>به</u> ر	[D0800000 - D08FFFFF] Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 2 - 0F4A
	¢.	[D0820000 - D0823FFF] Intel(R) I211 Gigabit Network Connection #3
	P	[D0900000 - D091FFFF] Intel(R) I211 Gigabit Network Connection #4
	<u>به</u> ر	[D0900000 - D09FFFFF] Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor PCI Express - Root Port 1 - 0F48
	P	[D0920000 - D0923FFF] Intel(R) I211 Gigabit Network Connection #4
	Ψ.	[D0A00000 - D0A0FFFF] Intel(R) USB 3.0 eXtensible Host Controller - 1.0 (Microsoft)
	j,	[D0A10000 - D0A13FFF] High Definition Audio Controller
	j,	[D0A14000 - D0A1401F] Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor Platform Control Unit - SMBus Port - 0F12
		[D0A16000 - D0A167FF] Standard SATA AHCI Controller
	<u>به</u> ر	[E0000000 - EFFFFFF] Motherboard resources
	<u>ا</u> پ	[E00000D0 - E00000DB] Intel(R) Sideband Fabric Device
	<u>الم</u>	[FED00000 - FED003FF] High precision event timer
	<u>به</u> ر	[FED01000 - FED01FFF] Motherboard resources
	<u>ا</u> پ	[FED03000 - FED03FFF] Motherboard resources
	j,	[FED04000 - FED04FFF] Motherboard resources
	j,	[FED08000 - FED08FFF] Motherboard resources
	j,	[FED0C000 - FED0FFFF] Motherboard resources
	1	[FED1C000 - FED1CFFF] Motherboard resources
	1	[FEE00000 - FEEFFFF] Motherboard resources
	1	[FEF00000 - FEFFFFFF] Motherboard resources
	1	[FF000000 - FFFFFFF] Device

~

#### B.3 IRQ Mapping Chart

Note: There is no PS/2 interface on the BOXER-6404M, hence the exclamation marks.

🗸 🌉 Interrupt request (IRQ)

	en aper equese (mag)	
Ļ	(ISA) 0x00000000 (00)	System timer
â	(ISA) 0x00000001 (01)	Standard PS/2 Keyboard
	(ISA) 0x0000003 (03)	High Definition Audio Controller
Ţ	(ISA) 0x00000004 (04)	Communications Port (COM1)
Ļ	(ISA) 0x0000008 (08)	High precision event timer
Ţ	(ISA) 0x0000000A (10)	Communications Port (COM10)
Ţ	(ISA) 0x000000B (11)	Communications Port (COM9)
<u>8</u>	(ISA) 0x000000C (12)	PS/2 Compatible Mouse
Ļ	(ISA) 0x0000036 (54)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x0000037 (55)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x0000038 (56)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x0000039 (57)	Microsoft ACPI-Compliant System
L.	(ISA) 0x000003A (58)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x000003B (59)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x000003C (60)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x000003D (61)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x000003E (62)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x000003F (63)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000040 (64)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000041 (65)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000042 (66)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000043 (67)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000044 (68)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000045 (69)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000046 (70)	Microsoft ACPI-Compliant System
Ņ	(ISA) 0x00000047 (71)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000048 (72)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000049 (73)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x0000004A (74)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x0000004B (75)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x0000004C (76)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x0000004D (77)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x0000004E (78)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x0000004F (79)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000050 (80)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000051 (81)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000052 (82)	Microsoft ACPI-Compliant System
	(ISA) 0x00000053 (83)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000054 (84)	Microsoft ACPI-Compliant System
Ļ	(ISA) 0x00000055 (85)	Microsoft ACPI-Compliant System
(ISA) 0x00000056 (86) (ISA) 0x00000057 (87) (ISA) 0x00000058 (88) (ISA) 0x00000059 (89) (ISA) 0x0000005A (90) (ISA) 0x0000005B (91) (ISA) 0x0000005C (92) (ISA) 0x0000005D (93) (ISA) 0x000005E (94) (ISA) 0x0000005F (95) (ISA) 0x0000060 (96) (ISA) 0x0000061 (97) (ISA) 0x0000062 (98) (ISA) 0x0000063 (99) (ISA) 0x0000064 (100) (ISA) 0x0000065 (101) (ISA) 0x0000066 (102) (ISA) 0x0000067 (103) (ISA) 0x0000068 (104) (ISA) 0x0000069 (105) (ISA) 0x000006A (106) (ISA) 0x000006B (107) (ISA) 0x000006C (108) (ISA) 0x000006D (109) (ISA) 0x000006E (110) (ISA) 0x000006F (111) (ISA) 0x00000070 (112) (ISA) 0x00000071 (113) (ISA) 0x00000072 (114) (ISA) 0x00000073 (115) (ISA) 0x0000074 (116) (ISA) 0x00000075 (117) (ISA) 0x00000076 (118) (ISA) 0x00000077 (119) (ISA) 0x00000078 (120) (ISA) 0x00000079 (121) (ISA) 0x000007A (122) (ISA) 0x000007B (123) (ISA) 0x000007C (124)

j,	(ISA) 0x0000007D (125)
j,	(ISA) 0x0000007E (126)
j,	(ISA) 0x0000007F (127)
j,	(ISA) 0x00000080 (128)
j,	(ISA) 0x00000081 (129)
j,	(ISA) 0x0000082 (130)
j	(ISA) 0x0000083 (131)
j,	(ISA) 0x0000084 (132)
j,	(ISA) 0x0000085 (133)
j	(ISA) 0x0000086 (134)
j	(ISA) 0x0000087 (135)
j,	(ISA) 0x0000088 (136)
j,	(ISA) 0x0000089 (137)
j,	(ISA) 0x000008A (138)
1	(ISA) 0x000008B (139)
1	(ISA) 0x000008C (140)
1	(ISA) 0x000008D (141)
1	(ISA) 0x000008E (142)
1	(ISA) 0x000008F (143)
1	(ISA) 0x00000090 (144)
1	(ISA) 0x00000091 (145)
1	(ISA) 0x00000092 (146)
1	(ISA) 0x00000093 (147)
1	(ISA) 0x00000094 (148)
1	(ISA) 0x00000095 (149)
1	(ISA) 0x00000096 (150)
1	(ISA) 0x00000097 (151)
1	(ISA) 0x00000098 (152)
1	(ISA) 0x00000099 (153)
1	(ISA) 0x0000009A (154)
1	(ISA) 0x000009B (155)
1	(ISA) 0x000009C (156)
1	(ISA) 0x000009D (157)
1	(ISA) 0x000009E (158)
	(ISA) 0X000009F (159)
1	(ISA) 0X00000000 (160)
1	(ISA) 0X000000A3 (161)
	(ISA) 0X00000A2 (162)
1	(ISA) 0X000000A3 (103)
1	(ISA) 0X000000A4 (104)

, 🜉	(ISA) 0x000000A5 (165)	
, 🜉	(ISA) 0x000000A6 (166)	
j,	(ISA) 0x000000A7 (167)	
, 🜉	(ISA) 0x000000A8 (168)	
, 🜉	(ISA) 0x000000A9 (169)	
, E	(ISA) 0x000000AA (170)	
, 🌉	(ISA) 0x000000AB (171)	
, E	(ISA) 0x000000AC (172)	
, E	(ISA) 0x000000AD (173)	
, 🜉	(ISA) 0x000000AE (174)	
, E	(ISA) 0x000000AF (175)	
, E	(ISA) 0x000000B0 (176)	
, E	(ISA) 0x000000B1 (177)	
, E	(ISA) 0x000000B2 (178)	
1	(ISA) 0x000000B3 (179)	
	(ISA) 0x000000B4 (180)	
1	(ISA) 0x000000B5 (181)	
1	(ISA) 0x00000B6 (182)	
	(ISA) 0x000000B7 (183)	
1	(ISA) 0x000000B8 (184)	
1	(ISA) 0x000000B9 (185)	
1	(ISA) 0x000000BA (186)	
, 🜉	(ISA) 0x000000BB (187)	
, 🜉	(ISA) 0x00000BC (188)	
, E	(ISA) 0x000000BD (189)	
, E	(ISA) 0x000000BE (190)	
, E	(ISA) 0x000000BF (191)	
, E	(ISA) 0x000000C0 (192)	
, E	(ISA) 0x000000C1 (193)	
, E	(ISA) 0x000000C2 (194)	
, E	(ISA) 0x000000C3 (195)	
, E	(ISA) 0x000000C4 (196)	
, E	(ISA) 0x000000C5 (197)	
, 🌉	(ISA) 0x000000C6 (198)	
, E	(ISA) 0x000000C7 (199)	
, 🜉	(ISA) 0x000000C8 (200)	
, E	(ISA) 0x000000C9 (201)	
j,	(ISA) 0x00000CA (202)	
, <b>L</b>	(ISA) 0x000000CB (203)	
j,	(ISA) 0x000000CC (204)	
j,	(ISA) 0x00000100 (256)	
j,	(ISA) 0x00000101 (257)	

j,	(ISA) 0x00000102 (258)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000103 (259)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000104 (260)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000105 (261)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000106 (262)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000107 (263)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000108 (264)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000109 (265)	Microsoft ACPI-Compliant System
j,	(ISA) 0x0000010A (266)	Microsoft ACPI-Compliant System
j,	(ISA) 0x0000010B (267)	Microsoft ACPI-Compliant System
j,	(ISA) 0x0000010C (268)	Microsoft ACPI-Compliant System
j,	(ISA) 0x0000010D (269)	Microsoft ACPI-Compliant System
j,	(ISA) 0x0000010E (270)	Microsoft ACPI-Compliant System
j,	(ISA) 0x0000010F (271)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000110 (272)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000111 (273)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000112 (274)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000113 (275)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000114 (276)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000115 (277)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000116 (278)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000117 (279)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000118 (280)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000119 (281)	Microsoft ACPI-Compliant System
j,	(ISA) 0x0000011A (282)	Microsoft ACPI-Compliant System
j,	(ISA) 0x0000011B (283)	Microsoft ACPI-Compliant System
j,	(ISA) 0x0000011C (284)	Microsoft ACPI-Compliant System
j 🖳	(ISA) 0x0000011D (285)	Microsoft ACPI-Compliant System
j 🖳	(ISA) 0x0000011E (286)	Microsoft ACPI-Compliant System
j 🖳	(ISA) 0x0000011F (287)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000120 (288)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000121 (289)	Microsoft ACPI-Compliant System
1	(ISA) 0x00000122 (290)	Microsoft ACPI-Compliant System
1	(ISA) 0x00000123 (291)	Microsoft ACPI-Compliant System
j,	(ISA) 0x00000124 (292)	Microsoft ACPI-Compliant System
1	(ISA) 0x00000125 (293)	Microsoft ACPI-Compliant System
,	(ISA) 0x00000126 (294)	Microsoft ACPI-Compliant System
1	(ISA) 0x00000127 (295)	Microsoft ACPI-Compliant System
1	(ISA) 0x00000128 (296)	Microsoft ACPI-Compliant System
1	(ISA) 0x00000129 (297)	Microsoft ACPI-Compliant System
1	(ISA) 0x0000012A (298)	Microsoft ACPI-Compliant System
j,	(ISA) 0x0000012B (299)	Microsoft ACPI-Compliant System

, E	(ISA) 0x0000012C (300)
, 🜉	(ISA) 0x0000012D (301)
, 🜉	(ISA) 0x0000012E (302)
, E	(ISA) 0x0000012F (303)
1	(ISA) 0x00000130 (304)
, E	(ISA) 0x00000131 (305)
, E	(ISA) 0x00000132 (306)
, 🜉	(ISA) 0x00000133 (307)
, 🜉	(ISA) 0x00000134 (308)
, 🜉	(ISA) 0x00000135 (309)
, 🜉	(ISA) 0x00000136 (310)
, 🜉	(ISA) 0x00000137 (311)
, 🜉	(ISA) 0x00000138 (312)
j,	(ISA) 0x00000139 (313)
j,	(ISA) 0x0000013A (314)
j,	(ISA) 0x0000013B (315)
, 🜉	(ISA) 0x0000013C (316)
, 🜉	(ISA) 0x0000013D (317)
j,	(ISA) 0x0000013E (318)
j,	(ISA) 0x0000013F (319)
j,	(ISA) 0x00000140 (320)
j,	(ISA) 0x00000141 (321)
, E	(ISA) 0x00000142 (322)
, 🜉	(ISA) 0x00000143 (323)
, 🖳	(ISA) 0x00000144 (324)
j,	(ISA) 0x00000145 (325)
j, E	(ISA) 0x00000146 (326)
, 🖳	(ISA) 0x00000147 (327)
, E	(ISA) 0x00000148 (328)
, 🜉	(ISA) 0x00000149 (329)
, 🜉	(ISA) 0x0000014A (330)
j,	(ISA) 0x0000014B (331)
, E	(ISA) 0x0000014C (332)
j,	(ISA) 0x0000014D (333)
, 🜉	(ISA) 0x0000014E (334)
, 🜉	(ISA) 0x0000014F (335)
, 🜉	(ISA) 0x00000150 (336)
j,	(ISA) 0x00000151 (337)
j,	(ISA) 0x00000152 (338)
j,	(ISA) 0x00000153 (339)
j,	(ISA) 0x00000154 (340)
j 🜉	(ISA) 0x00000155 (341)

📕 (ISA) 0x00000156 (342)	Microsoft ACP
ISA) 0x00000157 (343)	Microsoft ACP
ISA) 0x00000158 (344)	Microsoft ACP
ISA) 0x00000159 (345)	Microsoft ACP
ISA) 0x0000015A (346)	Microsoft ACP
ISA) 0x0000015B (347)	Microsoft ACP
ISA) 0x0000015C (348)	Microsoft ACP
ISA) 0x0000015D (349)	Microsoft ACP
ISA) 0x0000015E (350)	Microsoft ACP
ISA) 0x0000015F (351)	Microsoft ACP
ISA) 0x00000160 (352)	Microsoft ACP
(ISA) 0x00000161 (353)	Microsoft ACP
(ISA) 0x00000162 (354)	Microsoft ACP
(ISA) 0x00000163 (355)	Microsoft ACP
🜉 (ISA) 0x00000164 (356)	Microsoft ACP
🜉 (ISA) 0x00000165 (357)	Microsoft ACP
👰 (ISA) 0x00000166 (358)	Microsoft ACP
👰 (ISA) 0x00000167 (359)	Microsoft ACP
👰 (ISA) 0x00000168 (360)	Microsoft ACP
👰 (ISA) 0x00000169 (361)	Microsoft ACP
👰 (ISA) 0x0000016A (362)	Microsoft ACP
👰 (ISA) 0x0000016B (363)	Microsoft ACP
👰 (ISA) 0x0000016C (364)	Microsoft ACP
ٳ (ISA) 0x0000016D (365)	Microsoft ACP
ٳ (ISA) 0x0000016E (366)	Microsoft ACP
ٳ (ISA) 0x0000016F (367)	Microsoft ACP
👰 (ISA) 0x00000170 (368)	Microsoft ACP
👰 (ISA) 0x00000171 (369)	Microsoft ACP
👰 (ISA) 0x00000172 (370)	Microsoft ACP
👰 (ISA) 0x00000173 (371)	Microsoft ACP
🌉 (ISA) 0x00000174 (372)	Microsoft ACP
👰 (ISA) 0x00000175 (373)	Microsoft ACP
🌉 (ISA) 0x00000176 (374)	Microsoft ACP
🌉 (ISA) 0x00000177 (375)	Microsoft ACP
👰 (ISA) 0x00000178 (376)	Microsoft ACP
🌉 (ISA) 0x00000179 (377)	Microsoft ACP
[퇴직 (ISA) 0x0000017A (378)	Microsoft ACP
[퇴직 (ISA) 0x0000017B (379)	Microsoft ACP
[퇴직 (ISA) 0x0000017C (380)	Microsoft ACP
[퇴직 (ISA) 0x0000017D (381)	Microsoft ACP
[퇴직 (ISA) 0x0000017E (382)	Microsoft ACP
[텔 (ISA) 0x0000017F (383)	Microsoft ACP

I-Compliant System I-Compliant System

<u>وا</u>	,	(ISA)	0x00000180 (384)	Microsoft ACPI-Compliant System
٥	,	(ISA)	0x00000181 (385)	Microsoft ACPI-Compliant System
0 <sup>1</sup>	Ņ.	(ISA)	0x00000182 (386)	Microsoft ACPI-Compliant System
٥	,	(ISA)	0x00000183 (387)	Microsoft ACPI-Compliant System
٥	,	(ISA)	0x00000184 (388)	Microsoft ACPI-Compliant System
٥		(ISA)	0x00000185 (389)	Microsoft ACPI-Compliant System
٥	,	(ISA)	0x00000186 (390)	Microsoft ACPI-Compliant System
٥	,	(ISA)	0x00000187 (391)	Microsoft ACPI-Compliant System
٥	Ţ.	(ISA)	0x00000188 (392)	Microsoft ACPI-Compliant System
٥	Ţ.	(ISA)	0x00000189 (393)	Microsoft ACPI-Compliant System
٥	Ţ.	(ISA)	0x0000018A (394)	Microsoft ACPI-Compliant System
٥	<u>.</u>	(ISA)	0x0000018B (395)	Microsoft ACPI-Compliant System
0 <sup>1</sup>	Ţ.	(ISA)	0x0000018C (396)	Microsoft ACPI-Compliant System
0 <sup>1</sup>	ŗ.	(ISA)	0x0000018D (397)	Microsoft ACPI-Compliant System
0 <sup>1</sup>	Ē.	(ISA)	0x0000018E (398)	Microsoft ACPI-Compliant System
0 <sup>1</sup>	Ē.	(ISA)	0x0000018F (399)	Microsoft ACPI-Compliant System
0 <sup>1</sup>	Ē.	(ISA)	0x00000190 (400)	Microsoft ACPI-Compliant System
0 <sup>1</sup>	Ē.	(ISA)	0x00000191 (401)	Microsoft ACPI-Compliant System
0 <sup>1</sup>	Ē.	(ISA)	0x00000192 (402)	Microsoft ACPI-Compliant System
0 <sup>1</sup>	Ē.	(ISA)	0x00000193 (403)	Microsoft ACPI-Compliant System
0 <sup>1</sup>	Ē.	(ISA)	0x00000194 (404)	Microsoft ACPI-Compliant System
0 <sup>1</sup>	Ē.	(ISA)	0x00000195 (405)	Microsoft ACPI-Compliant System
0 <sup>1</sup>	<u> </u>	(ISA)	0x00000196 (406)	Microsoft ACPI-Compliant System
0 <sup>1</sup>	<u> </u>	(ISA)	0x00000197 (407)	Microsoft ACPI-Compliant System
٥	<u>.</u>	(ISA)	0x00000198 (408)	Microsoft ACPI-Compliant System
٥	<u>.</u>	(ISA)	0x00000199 (409)	Microsoft ACPI-Compliant System
٥	<u>.</u>	(ISA)	0x0000019A (410)	Microsoft ACPI-Compliant System
٥	<u>.</u>	(ISA)	0x0000019B (411)	Microsoft ACPI-Compliant System
٥	<u>.</u>	(ISA)	0x0000019C (412)	Microsoft ACPI-Compliant System
٥	<u>.</u>	(ISA)	0x0000019D (413)	Microsoft ACPI-Compliant System
٥	<u>.</u>	(ISA)	0x0000019E (414)	Microsoft ACPI-Compliant System
٥		(ISA)	0x0000019F (415)	Microsoft ACPI-Compliant System
٥	<u>.</u>	(ISA)	0x000001A0 (416)	Microsoft ACPI-Compliant System
٥		(ISA)	0x000001A1 (417)	Microsoft ACPI-Compliant System
٥		(ISA)	0x000001A2 (418)	Microsoft ACPI-Compliant System
٥		(ISA)	0x000001A3 (419)	Microsoft ACPI-Compliant System
٥	<u>.</u>	(ISA)	0x000001A4 (420)	Microsoft ACPI-Compliant System
٥		(ISA)	0x000001A5 (421)	Microsoft ACPI-Compliant System
٥	Ļ	(ISA)	0x000001A6 (422)	Microsoft ACPI-Compliant System
٥	,	(ISA)	0x000001A7 (423)	Microsoft ACPI-Compliant System
٥	Ţ	(ISA)	0x000001A8 (424)	Microsoft ACPI-Compliant System
ار	Ľ.	(ISA)	0x000001A9 (425)	Microsoft ACPI-Compliant System

<u>الم</u>	(ISA) 0x000001AA (426)
j,	(ISA) 0x000001AB (427)
j,	(ISA) 0x000001AC (428)
j,	(ISA) 0x000001AD (429)
j,	(ISA) 0x000001AE (430)
j,	(ISA) 0x000001AF (431)
j,	(ISA) 0x000001B0 (432)
)Ę	(ISA) 0x000001B1 (433)
),	(ISA) 0x000001B2 (434)
j,	(ISA) 0x000001B3 (435)
j,	(ISA) 0x000001B4 (436)
1	(ISA) 0x000001B5 (437)
1	(ISA) 0x000001B6 (438)
1	(ISA) 0x000001B7 (439)
1	(ISA) 0x000001B8 (440)
1	(ISA) 0x000001B9 (441)
1	(ISA) 0x000001BA (442)
1	(ISA) 0x000001BB (443)
1	(ISA) 0x000001BC (444)
1	(ISA) 0x000001BD (445)
1	(ISA) 0x000001BE (446)
1	(ISA) 0x000001BF (447)
1	(ISA) 0x000001C0 (448)
<u>1</u>	(ISA) 0x000001C1 (449)
<u>–</u>	(ISA) 0x000001C2 (450)
<u> </u>	(ISA) 0x000001C3 (451)
2	(ISA) 0x000001C4 (452)
2	(ISA) 0x000001C5 (453)
2	(ISA) 0x000001C6 (454)
1	(ISA) 0x000001C7 (455)
1	(ISA) 0x000001C8 (456)
1	(ISA) 0x000001C9 (457)
1	(ISA) 0x000001CA (458)
2	(ISA) 0x000001CB (459)
	(ISA) 0x000001CC (400)
1	(ISA) 0x000001CD (401)
	(ISA) 0X000001CE (402)
	(ISA) 0x000001CF (403)
12	(ISA) 0x000001D0 (404)
	(ISA) 0x000001D1 (405)
	(ISA) 0x00001D2 (400)
1	(13A) 0.00000103 (407)

(ISA) 0x000001D4 (468) (ISA) 0x000001D5 (469) (ISA) 0x000001D6 (470) (ISA) 0x000001D7 (471) (ISA) 0x000001D8 (472) (ISA) 0x000001D9 (473) (ISA) 0x000001DA (474) (ISA) 0x000001DB (475) (ISA) 0x000001DC (476) (ISA) 0x000001DD (477) (ISA) 0x000001DE (478) (ISA) 0x000001DF (479) (ISA) 0x000001E0 (480) (ISA) 0x000001E1 (481) (ISA) 0x000001E2 (482) (ISA) 0x000001E3 (483) (ISA) 0x000001E4 (484) (ISA) 0x00001E5 (485) (ISA) 0x000001E6 (486) (ISA) 0x000001E7 (487) (ISA) 0x000001E8 (488) (ISA) 0x000001E9 (489) (ISA) 0x000001EA (490) (ISA) 0x000001EB (491) (ISA) 0x000001EC (492) (ISA) 0x000001ED (493) (ISA) 0x000001EE (494) (ISA) 0x000001EF (495) (ISA) 0x000001F0 (496) (ISA) 0x000001F1 (497) (ISA) 0x000001F2 (498) (ISA) 0x000001F3 (499) (ISA) 0x000001F4 (500) (ISA) 0x000001F5 (501) (ISA) 0x000001F6 (502) (ISA) 0x000001F7 (503) (ISA) 0x000001F8 (504) (ISA) 0x000001F9 (505) (ISA) 0x000001FA (506) (ISA) 0x000001FB (507) (ISA) 0x000001FC (508) (ISA) 0x000001FD (509)

ļ٩	(ISA) 0x000001FE (510)	Microsoft ACPI-Compliant System
j,	(ISA) 0x000001FF (511)	Microsoft ACPI-Compliant System
j,	(PCI) 0x000000A (10)	Intel(R) Atom(TM)/Celeron(R)/Pentium(R) Processor Platform Control Unit - SMBus Port - 0F12
j,	(PCI) 0x00000016 (22)	High Definition Audio Controller
j,	(PCI) 0xFFFFFEB (-21)	Intel(R) Trusted Execution Engine Interface
P	(PCI) 0xFFFFFFC (-20)	Intel(R) I211 Gigabit Network Connection #4
P	(PCI) 0xFFFFFED (-19)	Intel(R) I211 Gigabit Network Connection #3
P	(PCI) 0xFFFFFEE (-18)	Intel(R) I211 Gigabit Network Connection #2
P	(PCI) 0xFFFFFFFF (-17)	Intel(R) I211 Gigabit Network Connection #2
2	(PCI) 0xFFFFFF0 (-16)	Intel(R) I211 Gigabit Network Connection #2
2	(PCI) 0xFFFFFFF1 (-15)	Intel(R) I211 Gigabit Network Connection #2
2	(PCI) 0xFFFFFF2 (-14)	Intel(R) I211 Gigabit Network Connection #3
P	(PCI) 0xFFFFFF3 (-13)	Intel(R) I211 Gigabit Network Connection #3
P	(PCI) 0xFFFFFFF4 (-12)	Intel(R) I211 Gigabit Network Connection #3
2	(PCI) 0xFFFFFF5 (-11)	Intel(R) I211 Gigabit Network Connection #4
2	(PCI) 0xFFFFFF6 (-10)	Intel(R) I211 Gigabit Network Connection #4
2	(PCI) 0xFFFFFFF7 (-9)	Intel(R) I211 Gigabit Network Connection #4
Ψ.	(PCI) 0xFFFFFF8 (-8)	Intel(R) USB 3.0 eXtensible Host Controller - 1.0 (Microsoft)
	(PCI) 0xFFFFFFF9 (-7)	Intel(R) HD Graphics
P	(PCI) 0xFFFFFFA (-6)	Intel(R) I211 Gigabit Network Connection
2	(PCI) 0xFFFFFFB (-5)	Intel(R) I211 Gigabit Network Connection
2	(PCI) 0xFFFFFFC (-4)	Intel(R) I211 Gigabit Network Connection
P	(PCI) 0xFFFFFFD (-3)	Intel(R) I211 Gigabit Network Connection
C 10	(PCI) 0xFFFFFFFE (-2)	Standard SATA AHCI Controller

## Appendix C

Electrical Specifications for I/O Ports

## C.1 Electrical Specifications for I/O Ports

I/O	Reference	Signal Name	Rate output
	CN1	+5 V/ +12 V	+5 V/ 1 A or
COMPOR			+12 V/1 A
+5 V Output for SATA HDD	CN7	+5 V	+5 V/1 A
CFast Slot	CN11	+3.3 V	+3.3 V/ 0.5 A
MiniCard Slot (USB 2.0 Port2	CN13	+3.3 VSB	+3.3 V/ 1.1 A
Only)		+1.5 V	+1.5 V/ 0.375 A
USB 3.0 Port 0	CN17	+5 VSB	+5V/1A
USB 2.0 Port 3	CN18	+5 VSB	+5 V/ 0.5A
USB 2.0 Port 1	CN19	+5 VSB	+5 V/ 0.5A
HDMI Port	CN20, CN21	- +5 V	+5 V/ 1A