EPIC-5537

AMD Geode LX800 Processors Onboard DDR333 Memory Up to 24-bit Single Channel LVDS 4 USB 2.0 / 2 COMs / 1 IDE/

1 SATAII/ 1 CompactFlash/ 8-bit Digital I/O

EPIC-5537 Manual Rev.A 3rd Ed. January 2010

Copyright Notice

This document is copyrighted, 2009. 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.

Acknowledgments

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

- Award is a trademark of Award Software International, Inc.
- CompactFlash[™] is a trademark of the Compact Flash Association.
- AMD, the AMD Arrow logo and combinations thereof are trademarks of Advanced Micro Devices, Inc.
- Microsoft Windows[®] is a registered trademark of Microsoft Corp.
- ITE is a trademark of Integrated Technology Express, Inc.
- IBM, PC/AT, PS/2, and VGA are trademarks of International Business Machines Corporation.

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

Packing List

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

- 1 9657666600 Jumper Cap
- 1 9681945700 Cable Kit
 - > 1709070500 SATA Cable, 7 Pitch, 1.27mm,

50cm

- > 1700060152 Keyboard/Mouse Cable, Length 15cm
- 1 EPIC-5537 CPU Card
- 1 Quick Installation Guide
- 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.

Contents

Chapter 1 General Information

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

2.1 Safety Precautions	2-2
2.2 Location of Connectors and Jumpers	2-3
2.3 Mechanical Drawing	2-5
2.4 List of Jumpers	2-7
2.5 List of Connectors	2-7
2.6 Setting Jumpers	2-9
2.7 CMOS Clear Selection (JP1)	2-10
2.8 COM2 +5V/Ring Selection (JP2)	2-10
2.9 TTL/ LVDS Clock, LCD Power Shift Selection (JP3)	2-10
2.10 Power Selection (CN1)	2-10
2.11 Power Wafer (Line-in) (CN2)	2-10
2.12 CompactFlash Connector (CN3)	2-11
2.13 IDE Connector (CN4)	2-11
2.14 LAN Connector (CN5, CN6)	2-12
2.15 Digital I/O Connector (CN7)	2-12
2.16 PCI-104 Connector (CN8)	2-12
2.17 PC/104 Connector (CN9)	2-12

2.18 Keyboard, Mouse Connector (CN10)	. 2-12
2.19 Fan Connector (CN11)	. 2-13
2.20 COM1 Connector (Up) (CN12)	. 2-13
2.21 COM2 Connector (Down) (CN13)	. 2-13
2.22 SATA Connector (CN14)	. 2-13
2.23 TFT LCD Connector (CN15)	. 2-14
2.24 LVDS Connector (CN16)	. 2-15
2.25 VGA Connector (CN17)	. 2-17
2.26 Audio Connector (CN18)	. 2-17
2.27 USB Connector (CN20)	. 2-18
2.28 USB Connector (CN21)	. 2-18

Chapter 3 Award BIOS Setup

3.1 System Test and Initialization	3-2
3.2 Award BIOS Setup	3-3

Chapter 4 Driver Installation

4.1 Software Drivers	. 4-2
4.2 Necessary to know	. 4-3
4.3 Installing VGA Driver	. 4-4
4.4 Installing AES Driver	. 4-5
4.5 Installing PCI to ISA Bridge Driver	. 4-6
4.6 Installing Ethernet Driver	. 4-7
4.7 Installing AMD Audio Driver	. 4-8
4.8 Installing Realtek Audio Driver	. 4-9
4.9 Installing VRAID Driver	. 4-9

Appendix A Programming The Watchdog Timer

A.1	Programming	A	2
-----	-------------	---	---

Appendix B I/O Information

B.1 I/O Address Map	.B-2
B.2 1 st MB Memory Address Map	.B-3
B.3 IRQ Mapping Chart	.B-4
B.4 DMA Channel Assignments	.B-4

Appendix C Mating Connector

C.1 List of Mating Connectors	and Cables C-2
-------------------------------	----------------

Chapter

General Information

Chapter 1 General Information 1-1

1.1 Introduction

AAEON announces a brand new EPIC Board-EPIC-5537, designed to fit in diverse applications that demand for fitting in different space limitations and high performance.

EPIC-5537 accommodates onboard AMD Geode LX 800 processor and the Front Side Bus is 500MHz. This model features DDR 333 and system memory is to 256MB (optional 512MB). Moreover, EPIC-5537 adopts AMD LX series + CS5536 as its chipset.

In addition, EPIC-5537 deploys Intel 82551ER 10/100Base-TX chip and features two RJ-45 ports onboard to display the transcendent performance of network connections. This new EPIC Express Board configures an AMD LX series + TI SN75LVDS83 display chipset to support CRT/LCD simultaneous/ dual view displays.

In addition to the PC/104+ expansion, EPIC-5537 also features one EIDE, one SATA, one Type II CompactFlash for the storage and four USB 2.0 ports, two COM ports, 8-bit Digital I/O for flexible I/O expansion. EPIC-5537 is an excellent choice for your vital applications.

1.2 Features

- Onboard AMD Geode LX 800 Processor
- AMD LX 800 + CS5536 Chipset
- Onboard DDR333 Memory 256MB (Optional 512MB)
- 10/100Base-TX Ethernet x 2
- CRT & Up to 24-bit Single Channel LVDS
- AC97 2.0 Code 2CH Audio
- SATA x 1, EIDE x 1, CompactFlash x 1
- USB2.0 x 4, COM x 2, 8-bit Digital I/O
- PC/104+ Expansion
- +5V Only Operation, AT Power Type

1.3 Specifications

System

033	oystem			
•	CPU	Onboard AMD Geode LX 800		
		(500MHz) processor		
•	System Memory	Onboard DDR333-256MB		
		(Optional 512MB)		
•	Chipset	AMD LX 800 + CS5536		
•	I/O Chipset	SMSC SCH3112		
•	Ethernet	Intel 82551ER (Intel 82551IT for		
		WiTAS series products),		
		10/100Base-TX, RJ-45 x 2		
•	BIOS	Award Plug & Play BIOS –		
		1 MB ROM		
•	Watchdog Timer	Generates a time-out system reset		
•	H/W status monitoring	Supports power supply voltage		
		and temperature monitoring		
•	Expansion Interface	PC/104+ (PCI-104 + PC/104)		
•	Battery	Lithium battery		
•	Power Requirement	+5V only, AT		
•	Operating Temperature	32°F~140°F (0°C~60°C), Optional:		
		-4°F~158°F (-20°C~70°C) (for		
		WiTAS series products)		
•	Storage Temperature	-40°F~176°F (-40°C~80°C)		
•	Operating Humidity	0%~90% relative humidity,		

Chapter 1 General Information 1-4

	EPIC Board	EPIC-5537
		non-condensing
•	Board Size	4.53"(L) x 6.5" (W)
		(115mm x 165mm)
•	Gross Weight	1.2 lb (0.5kg)
Dis	play: Support: CRT/LCD	simultaneous/ dual view displays
•	Chipset	AMD LX series + TI
		SN75LVDS83
•	Memory	Shared system memory up to
		254MB
•	Resolutions	Up to 1920 x 1440 @ 24bpp
		colors for CRT; Up to 1600 x
		1200 @ 24bpp colors for LCD
•	LCD Interface	Up to 24-bit single channel
		LVDS/ TTL LCD (configured by
		manufacturer)
I/O		
•	Storage	EIDE x 1 (UDMA100 for two
		devices), SATA x 1, Type II
		CompactFlash x 1
•	Serial Port	RS-232 x 2
•	USB	USB 2.0 x 4
•	PS/2 Port	Keyboard + Mouse x 1
•	Digital I/O	Supports 8-bit (Programmable)
•	Audio	Line-in, Line-out, Mic-in & CD-in



Quick Installation Guide

Notice:

The Quick Installation Guide is derived from Chapter 2 of user manual. For other chapters and further installation instructions, please refer to the user manual CD-ROM that came with the product.



Part No. 2007553712 Printed in Taiwan January 2010

2.1 Safety Precautions



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

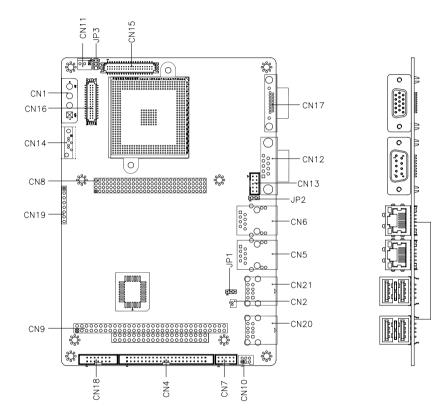
Caution!



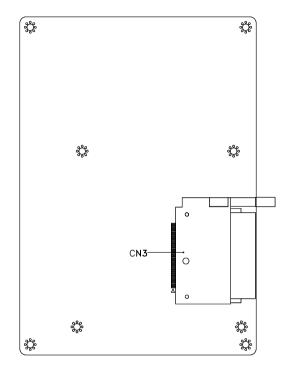
Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not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

2.2 Location of Connectors and Jumpers

Component Side

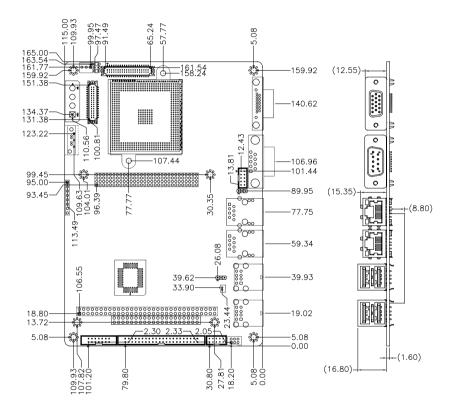


Solder Side

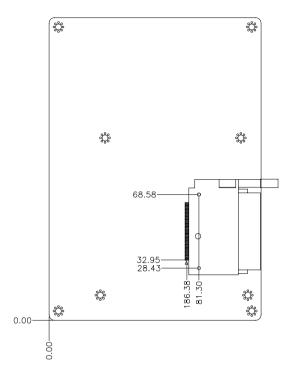


2.3 Mechanical Drawing

Component Side



Solder Side



2.4 List of Jumpers

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

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

Label	Function
JP1	Clear CMOS
JP2	COM2 RING /+5V Selection

Jumpers

2.5 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 each board's connectors:

Connectors

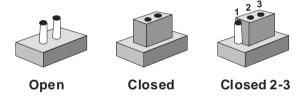
Label	Function
CN1	Power Connector
CN2	Battery wafer
CN3	Compact Flash Connector
CN4	Primary EIDE Connector
CN5	Ethernet Connector1
CN6	Ethernet Connector2
CN7	Digital I/O Connector

CN8	PCI-104 Connector
CN9	PC-104 Connector
CN10	Keyboard/Mouse Connector
CN11	System FAN Connector
CN12	COM1 Connector
CN13	COM2 Connector
CN14	SATA Connector
CN15	TFT LCD Connector
CN16	LVDS Connector
CN17	VGA Connector
CN18	Audio Connector
CN19	CPLD Download header
CN20	USB Connector1
CN21	USB Connector2

2.6 Setting Jumpers

You configure your card to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch. It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To "close" a jumper you connect the pins with the clip.

To "open" a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2 and 3. In this case you would connect either pins 1 and 2 or 2 and 3.



A pair of needle-nose pliers may be helpful when working with jumpers.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any change.

Generally, you simply need a standard cable to make most connections.

2.7 CMOS Clear Selection (JP1)

JP1	Function	
1-2	Normal (Default)	
2-3	Clear CMOS	

2.8 COM2 +5V/Ring Selection (JP2)

JP2	Function
1-2	+5V
2-3	Ring (Default)

2.9 TTL/LVDS Clock, LCD Power Shift Selection (JP3)

JP3	Function
1-3	Normal Clock (Default)
3-5	Inverse Clock
2-4	+5V For CN15
4-6	+3.3V For CN15 (Default)

2.10 Power Selection (CN1)

Pin	Signal	
1	NC	
2	GND	
3	GND	
4	+5V	

2.11 Power Wafer (Line-in) (CN2)

Pin	Signal	
1	Battery Power (+3V)	
2	GND	

2.12 CompactFlash Connector (CN3)

Standard Compact Flash Connector

2.13 IDE Connector (CN4)

1 IDERST 2 GND 3 PID7 4 PID8 5 PID6 6 PID9 7 PID5 8 PID10 9 PID4 10 PID11 11 PID3 12 PID12 13 PID2 14 PID13 15 PID1 16 PID14 17 PID0 18 PID15 19 GND 20 NC 21 PDREQ 22 GND 23 PIOW# 24 GND 25 PIOR# 26 GND 27 PRDY 28 Pull 330R to GND 29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40<	Pin	Signal	Pin	Signal
5 PID6 6 PID9 7 PID5 8 PID10 9 PID4 10 PID11 11 PID3 12 PID12 13 PID2 14 PID13 15 PID1 16 PID14 17 PID0 18 PID15 19 GND 20 NC 21 PDREQ 22 GND 23 PIOW# 24 GND 25 PIOR# 26 GND 27 PRDY 28 Pull 330R to GND 29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	1	IDERST	2	GND
7 PID5 8 PID10 9 PID4 10 PID11 11 PID3 12 PID12 13 PID2 14 PID13 15 PID1 16 PID14 17 PID0 18 PID15 19 GND 20 NC 21 PDREQ 22 GND 23 PIOW# 24 GND 25 PIOR# 26 GND 27 PRDY 28 Pull 330R to GND 29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	3	PID7	4	PID8
9 PID4 10 PID11 11 PID3 12 PID12 13 PID2 14 PID13 15 PID1 16 PID14 17 PID0 18 PID15 19 GND 20 NC 21 PDREQ 22 GND 23 PIOW# 24 GND 25 PIOR# 26 GND 27 PRDY 28 Pull 330R to GND 29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	5	PID6	6	PID9
11 PID3 12 PID12 13 PID2 14 PID13 15 PID1 16 PID14 17 PID0 18 PID15 19 GND 20 NC 21 PDREQ 22 GND 23 PIOW# 24 GND 25 PIOR# 26 GND 27 PRDY 28 Pull 330R to GND 29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	7	PID5	8	PID10
13 PID2 14 PID13 15 PID1 16 PID14 17 PID0 18 PID15 19 GND 20 NC 21 PDREQ 22 GND 23 PIOW# 24 GND 25 PIOR# 26 GND 27 PRDY 28 Pull 330R to GND 29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	9	PID4	10	PID11
15 PID1 16 PID14 17 PID0 18 PID15 19 GND 20 NC 21 PDREQ 22 GND 23 PIOW# 24 GND 25 PIOR# 26 GND 27 PRDY 28 Pull 330R to GND 29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	11	PID3	12	PID12
17 PID0 18 PID15 19 GND 20 NC 21 PDREQ 22 GND 23 PIOW# 24 GND 25 PIOR# 26 GND 27 PRDY 28 Pull 330R to GND 29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	13	PID2	14	PID13
19 GND 20 NC 21 PDREQ 22 GND 23 PIOW# 24 GND 25 PIOR# 26 GND 27 PRDY 28 Pull 330R to GND 29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	15	PID1	16	PID14
21 PDREQ 22 GND 23 PIOW# 24 GND 25 PIOR# 26 GND 27 PRDY 28 Pull 330R to GND 29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	17	PID0	18	PID15
23 PIOW# 24 GND 25 PIOR# 26 GND 27 PRDY 28 Pull 330R to GND 29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	19	GND	20	NC
25 PIOR# 26 GND 27 PRDY 28 Pull 330R to GND 29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	21	PDREQ	22	GND
27 PRDY 28 Pull 330R to GND 29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	23	PIOW#	24	GND
29 PACK# 30 GND 31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	25	PIOR#	26	GND
31 PIRQ14 32 NC 33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	27	PRDY	28	Pull 330R to GND
33 PPDA1 34 ATA66_DET 35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	29	PACK#	30	GND
35 PPDA0 36 PPDA2 37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	31	PIRQ14	32	NC
37 PPCS1# 38 PPCS3# 39 HDLED# 40 GND 41 +5V 42 +5V	33	PPDA1	34	ATA66_DET
39 HDLED# 40 GND 41 +5V 42 +5V	35	PPDA0	36	PPDA2
41 +5V 42 +5V	37	PPCS1#	38	PPCS3#
	39	HDLED#	40	GND
43 GND 44 NC	41	+5V	42	+5V
	43	GND	44	NC

2.14 LAN Connector (CN5, CN6)

Standard RJ-45 LAN connector

2.15 Digital I/O Connector (CN7)

Address: 800H

Pin	Signal	Bit	SMSC 3112 Pin	
1	DIO 1	0	85	
2	DIO_2	1	86	
3	DIO_3	2	96	
4	DIO_4	3	95	
5	DIO_5	4	87	
6	DIO_6	5	92	
7	DIO_7	6	89	
8	DIO_8	7	88	
9	+5V			
10	GND			

2.16 PCI-104 Connector (CN8)

Standard PCI-104 Connector

2.17 PC/104 Connector (CN9)

Standard PC/104 Connector

2.18 Keyboard, Mouse Connector (CN10)

Pin	Name	Pin	Name
1	KDAT	2	KCLK
3	GND	4	+5V with fuse

	EPIC Board		E P I C - 5 5 3 7
5	MDAT	6	MCLK

2.19 Fan Connector (CN11)

Pin	Signal	
1	GND	
2	FAN Power (+5V)	
3	FAN_TAC	

2.20 COM1 Connector (Up) (CN12)

Pin	Signal	Pin	Signal
1	DCD1	2	RXD1
3	TXD1	4	DTR1
5	GND	6	DSR1
7	RTS1	8	CTS1
9	RI1		

2.21 COM2 Connector (Down) (CN13)

Pin	Signal	Pin	Signal
1	DCD2	2	RXD2
3	TXD2	4	DTR2
5	GND	6	DSR2
7	RTS2	8	CTS2
9	+5V/ RI2	10	NC

2.22 SATA Connector (CN14)

Standard SATA Connector

2.23 TFT LCD Connector (CN15)

For 18-bit TFT LCD

1 +5V 2 +5V 3 GND 4 GND 5 +3.3V 6 +3.3V 7 Backlight enable 8 GND 9 NC 10 NC 11 B0 12 B1 13 B2 14 B3 15 B4 16 B5 17 NC 18 NC 19 G0 20 G1 21 G2 22 G3 23 G4 24 G5 25 NC 26 NC 27 R0 28 R1 29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC 39 NC 40 NC	Pin	Signal	Pin	Signal
5 +3.3V 6 +3.3V 7 Backlight enable 8 GND 9 NC 10 NC 11 B0 12 B1 13 B2 14 B3 15 B4 16 B5 17 NC 18 NC 19 G0 20 G1 21 G2 22 G3 23 G4 24 G5 25 NC 26 NC 27 R0 28 R1 29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	1	+5V	2	+5V
7 Backlight enable 8 GND 9 NC 10 NC 11 B0 12 B1 13 B2 14 B3 15 B4 16 B5 17 NC 18 NC 19 G0 20 G1 21 G2 22 G3 23 G4 24 G5 25 NC 26 NC 27 R0 28 R1 29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	3	GND	4	GND
9 NC 10 NC 11 B0 12 B1 13 B2 14 B3 15 B4 16 B5 17 NC 18 NC 19 G0 20 G1 21 G2 22 G3 23 G4 24 G5 25 NC 26 NC 27 R0 28 R1 29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	5	+3.3V	6	+3.3V
11 B0 12 B1 13 B2 14 B3 15 B4 16 B5 17 NC 18 NC 19 G0 20 G1 21 G2 22 G3 23 G4 24 G5 25 NC 26 NC 27 R0 28 R1 29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	7	Backlight enable	8	GND
13 B2 14 B3 15 B4 16 B5 17 NC 18 NC 19 G0 20 G1 21 G2 22 G3 23 G4 24 G5 25 NC 26 NC 27 R0 28 R1 29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	9	NC	10	NC
15 B4 16 B5 17 NC 18 NC 19 G0 20 G1 21 G2 22 G3 23 G4 24 G5 25 NC 26 NC 27 R0 28 R1 29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	11	B0	12	B1
17 NC 18 NC 19 G0 20 G1 21 G2 22 G3 23 G4 24 G5 25 NC 26 NC 27 R0 28 R1 29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	13	B2	14	B3
19 G0 20 G1 21 G2 22 G3 23 G4 24 G5 25 NC 26 NC 27 R0 28 R1 29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	15	B4	16	B5
21 G2 22 G3 23 G4 24 G5 25 NC 26 NC 27 R0 28 R1 29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	17	NC	18	NC
23 G4 24 G5 25 NC 26 NC 27 R0 28 R1 29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	19	G0	20	G1
25 NC 26 NC 27 R0 28 R1 29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	21	G2	22	G3
27 R0 28 R1 29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	23	G4	24	G5
29 R2 30 R3 31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	25	NC	26	NC
31 R4 32 R5 33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	27	R0	28	R1
33 GND 34 GND 35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	29	R2	30	R3
35 LCD CLOCK 36 LCD VSYNC 37 LCD DE 38 LCD HSYNC	31	R4	32	R5
37 LCD DE 38 LCD HSYNC	33	GND	34	GND
	35	LCD CLOCK	36	LCD VSYNC
39 NC 40 NC	37	LCD DE	38	LCD HSYNC
	39	NC	40	NC

For 24-bit TFT LCD

Pin	Signal	Pin	Signal
1	+5V	2	+5V
3	GND	4	GND

	EPIC Board		E P I C - 5 5 3 7
5	+3.3V	6	+3.3V
7	Backlight enable	8	GND
9	B0	10	B1
11	B2	12	B3
13	B4	14	B5
15	B6	16	B7
17	G0	18	G1
19	G2	20	G3
21	G4	22	G5
23	G6	24	G7
25	R0	26	R1
27	R2	28	R3
29	R4	30	R5
31	R6	32	R7
33	GND	34	GND
35	LCD CLOCK	36	LCD VSYNC
37	LCD DE	38	LCD HSYNC
39	NC	40	NC

2.24 LVDS Connector (CN16)

For 18-bit LVDS

Signal	Pin	Signal
Backlight enable	2	NC
LVDS Power	4	GND
TX1CLK#	6	TX1CLK
LVDS Power	8	GND
TX1OUT#0	10	TX1OUT0
TX1OUT#1	12	TX1OUT1
	Backlight enable LVDS Power TX1CLK# LVDS Power TX1OUT#0	Backlight enable2LVDS Power4TX1CLK#6LVDS Power8TX1OUT#010

	EPIC Board		E P I C - 5 5 3 7
13	TX1OUT#2	14	TX1OUT2
15	NC	16	NC
17	NC	18	NC
19	NC	20	NC
21	NC	22	NC
23	NC	24	NC
25	NC	26	NC
27	LVDS Power	28	GND
29	NC	30	NC

For 24-bit LVDS

Pin	Signal	Pin	Signal
1	Backlight enable	2	NC
3	LVDS Power	4	GND
5	TX1CLK#	6	TX1CLK
7	LVDS Power	8	GND
9	TX1OUT#0	10	TX1OUT0
11	TX1OUT#1	12	TX1OUT1
13	TX1OUT#2	14	TX1OUT2
15	TX1OUT#3	16	TX1OUT3
17	NC	18	NC
19	NC	20	NC
21	NC	22	NC
23	NC	24	NC
25	NC	26	NC
27	LVDS Power	28	GND
29	NC	30	NC

2.25 VGA Connector (CN17)

Pin	Signal	Pin	Signal
1	R	2	G
3	В	4	NC
5	GND	6	GND
7	GND	8	GND
9	+5V with Fuse	10	GND
11	NC	12	DDC_DAT
13	HSYNC	14	VSYNC
15	DDC_CLK		

2.26 Audio Connector (CN18)

Pin	Signal
1	MIC1
2	VREFOUT
3	Audio GND
4	CD-ROM GND
5	LINE_IN_L
6	CD-ROM_L
7	LINE_IN_R
8	CD-ROM GND
9	Audio GND
10	CD-ROM_R
11	LINE_OUT_L
12	LINE_OUT_R
13	Audio GND
14	Audio GND

2.27 USB Connector (CN20)

Pin	Signal	Pin	Signal	
1	USB Power	5	USB Power	
2	USBD1-	6	USBD0-	
3	USBD1+	7	USBD0+	
4	GND	8	GND	

2.28 USB Connector (CN21)

Pin	Signal	Pin	Signal
1	USB Power	5	USB Power
2	USBD3-	6	USBD2-
3	USBD3+	7	USBD2+
4	GND	8	GND

EPIC-5537

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

	有毒有害物质或元素					
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	0	0	0	0
及其电子组件	~	0			0	Ŭ
外部信号	×	0	0	0	0	0
连接器及线材	~		Ŭ		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 11363-2006标准规定的限量要求以下。						
X:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求。						

备注:此产品所标示之环保使用期限,系指在一般正常使用状况下。

Chapter 3

Award BIOS Setup

Chapter 3 Award BIOS Setup 3-1

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 EPIC-5537 CMOS memory has an integral lithium battery backup for data retention. However, you will need to replace the complete unit when it finally runs down.

3.2 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. (keyboard, mouse etc.)

Power Management Setup

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

PnP/PCI Configurations

This entry appears if your system supports PnP/PCI.

PC Health Status

Use this menu to set PC Health Status.

Frequency/Voltage Control

Use this menu to specify your settings for auto detect DIMM/PCI clock and spread spectrum.

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 Password

Use this menu to set Supervisor Password.

Save and Exit Setup

Save CMOS value changes to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

You can refer to the "AAEON BIOS Item Description.pdf" file in the CD for the meaning of each setting in this chapter.

Chapter

Driver Installation

Chapter 4 Driver Installation 4 - 1

4.1 Software Drivers

This chapter describes the operation and installation of the display drivers supplied on the Supporting CD-ROM that are shipped with your product. The onboard VGA adapter is based on the AMD LX VGA Flat Panel/CRT controller. This controller offers a large set of extended functions and higher resolutions. The purpose of the enclosed software drivers is to take advantage of the extended features of the AMD LX VGA Flat Panel/CRT controller.

Hardware Configuration

Some of the high-resolution drivers provided in this package will work only in certain system configurations. If a driver does not display correctly, try the following:

- Change the display controller to CRT-only mode, rather than flat panel or simultaneous display mode. Some high-resolution drivers will display correctly only in CRT mode.
- If a high-resolution mode does not support your system, try to use a lower-resolution mode. For example, 1024 x 768 mode will not work on some systems, but 800 x 600 mode supports the most.

4.2 Necessary to Know

The instructions in this manual assume that you understand elementary concepts of MS-DOS and the IBM Personal Computer. Before you attempt to install any driver from the *Supporting CD-RO*M, you should:

- Know how to copy files from a CD-ROM to a directory on the hard disk
- Understand the MS-DOS directory structure
 If you are uncertain about any of these concepts, please refer
 to the DOS or OS/2 user reference guides for more
 information before you proceed with the installation.

Before you begin

The Supporting CD-ROM contains different drivers for corresponding Windows OS, please choose the specific driver for your Windows OS.

4.3 Installing VGA Driver

Win XP / Win XPe VGA

Place the Driver CD-ROM into your CD-ROM drive and follow the steps below to install.

- 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 Video Controller (VGA Compatible).
- 7. Click on Update Driver....
- 8. Click on Next.
- 9. Select Search for a suitable driver..., then click on Next.
- 10. Select Specify a location, then click on Next.
- 11. Click on Browse.
- 12. Select "Ix_win" file from CD-ROM (Driver/Step 1 -

LX_Graphics) then click on Open.

- 13. Click on OK.
- 14. Click on Next.
- 15. Click on Yes.
- 16. Click on Finish.

<u>Note:</u> The user must install this system driver before install other device drivers.

4.4 Installing AES Driver

Win XP / Win XPe AES

Place the Driver CD-ROM into your CD-ROM drive and follow the steps below to install.

- 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 Entertainment Encryption/Decryption

Controller.

- 7. Click on Update Driver...
- 8. Click on Next.
- 9. Select Search for a suitable driver..., then click on Next.
- 10. Select Specify a location, then click on Next.
- 11. Click on Browse.
- Select "LXAES" file from CD-ROM (Driver/Step 2 AES) then click on Open.
- 13. Click on OK.
- 14. Click on Next.
- 15. Click on Finish.

4.5 Installing PCI to ISA Bridge Driver

Win XP / Win XPe System

Place the Driver CD-ROM into your CD-ROM drive and follow the following steps to install.

- 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 Other PCI Bridge Device
- 7. Click on Update Driver...
- 8. Click on Next.
- 9. Select Search for a suitable driver..., then click on Next.
- 10. Select **Specify a location**, then click on **Next**.
- 11. Click on Browse.
- Select "Ite" file from CD-ROM (Driver/Step 3- PCI to ISA Bridge) then click on open.
- 13. Click on OK.
- 14. Click on Next.
- 15. Click on Finish.

4.6 Installing Ethernet Driver

- 1. Click on the Step 4 Intel 82551 Lan Driver folder.
- 2. Double click on the **PROWinXPE.exe** file located in the folder.
- 3. Follow the instructions that the window shows.
- 4. Click on Start Button
- 5. Click on Settings Button
- 6. Click on Control Panel Button
- 7. Click on System Button
- 8. Select Hardware and click on Device Manager...
- 9. Double click on Ethernet Controller
- 10. Click on Update Driver...
- 11. Click on Next.
- 12. Select Search for a suitable driver..., then click on Next.
- 13. Select Specify a location, then click on Next
- 14. Click on Browse
- 15. Select "WinXP Embeded" file from C:\ (IntelEmbedded6.0 \ PRO100) then click on Open.
- 16. Click on OK
- 17. Click on Next
- 15. Click on Finish

4.7 Installing AMD Audio Driver

Win XP / Win XPe Audio

Place the Driver CD-ROM into your CD-ROM drive and follow the steps below to install.

- 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 Multimedia Audio Controller
- 7. Click on **Update Driver...**
- 8. Click on Next
- 9. Select Search for a suitable driver..., then click on Next
- 10. Select Specify a location, then click on Next
- 11. Click on Browse
- 12. Select "LXWDMAu" file from CD-ROM (Driver/Step 5 AMD

Audio Driver) then click on Open

- 13. Double click on the "bin" folder
- 14. Click on OK
- 15. Click on Next
- 16. Click on Yes
- 17. Click on Finish

4.8 Installing Realtek Audio Driver

- 1. Click on the Step 6 -Realtek audio driver folder.
- 2. Double click on the WDM_A400.exe file located in the folder.
- 3. Follow the instructions that the window shows.
- 4. The system will help you install the driver automatically.

4.9 Installing VRAID Driver

Please follow the application note to install the *Step 7-VRAID_Driver_V550B*

Application Note:

Window Operating System cannot recognize the driver of chip VT6421 and treat it as a third-part driver. Please follow below steps to install the driver with Operating System.

- Creating a Drive Disk: copy the SATA driver from AAEON CD to floppy disk before install OS.
 - Click on Step 7-VRAID_Driver_V550B
 - Click on VRAIDDrv (see below picture)





Click on the OS what you are going to install.

	ID Driver Diek Preparation Utility		E
we	connect		PE
This proj	e to VIA V-RAID Driver Dak Preparation Utilit gram lets you make a RAID Setup disk for bage	el OS you select.	
- Tar	get CS	- Target Drive	
	Windows XP/ Server 2003 (x86)		_
	Windows MP/ Server 2003 (v64)	FEE	-
	F Windows 2K		
	Windows NT4 (x86)		
	Vista (s95)		
	1 (1992)		

Install Floppy or USB Floppy

VIA V-RAID Driver Disk Preparation Utility	
we connect	
Target CE Windows XP/ Server 2003 (x86)	
- Target Duive ΔΛ	
<上一步图 (下一步型) 取消	

Finish: driver disk ready.



- 2. Insert your Windows CD, and then restart the computer
- 3. Follow the on-screen instructions to begin the Windows installation.
- 4. When prompted to install a third-party driver, press F6.

<u>Note</u>: When F6 is active, a prompt appears at the bottom of the screen for only 5 seconds. If you miss your chance to press F6, restart your computer.



5. Insert the driver disk, and then wait until you are prompted to install a driver.



Press S to specify the driver is on a floppy disk, and then press
 Enter



- 7. The computer reads the disk
- 8. When the SATA driver is found, press Enter.





9. Follow the on-screen instructions to complete the installation.

Appendix A

Programming the Watchdog Timer

Appendix A Programming the Watchdog Timer A-1

A.1 Programming

EPIC-5537 utilizes SCH3112-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.

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 Input, =0 No Invert Bit(3:2) Alternate Function Select 11=WDT 10=Elther Edge Triggered Interrupt Input 4 (Note 26.20) 01=LED1 00=GPIO Bits(6:4) Reserved Bit(7) Output Type Select 1=Open Drain 0=Push Pull

The related register for configuring WDT is list as follows:

Appendix A Programming the Watchdog Timer A-2

E P I C - 5 5 3 7

WDT_TIME_OUT Default = 0x00 on VCC POR, VTR POR, and PCI Reset	65 (R/W)	Watch-dog Timeout Bit[0] Reserved Bit[1] Reserved Bit[5]:2] Reserved, = 00000 Bit[7] WDT Time-out Value Units Select = 0 Minutes (default) = 1 Seconds
WDT_VAL Default = 0x00 on VCC POR, VTR POR, and PCI Reset	66 (R/W)	Watch-dog Timer Time-out Value Binary coded, units = minutes (default) or seconds, selectable via Bit[7] of WDT_TIME_OUT register (0x52). 0x00 Time out disabled 0x01 Time-out = 1 minute (second) 0xFF Time-out = 255 minutes (seconds)

NAME	REG OFFSET (HEX)	DESCRIPTION
WDT_CFG Default = 0x00 on VCC POR, VTR POR, and PCI Reset	67 (R/W)	Watch-dog timer Configuration Bit[0] Reserved Bit[1] Keyboard Enable =1 WDT is reset upon a Keyboard interrupt. =0 WDT is not affected by Keyboard interrupts. Bit[2] Mouse Enable =1 WDT is reset upon a Mouse interrupt. =0 WDT is not affected by Mouse interrupt. Bit[3] Reserved Bits[7:4] WDT Interrupt Mapping 1111 = IRQ15 0011 = IRQ3 0010 = IRQ3 0010 = IRQ3 0010 = Disable 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.
WDT_CTRL Default = 0x00 on VCC POR and VTR POR Default = 0000000xb on PCI Reset Note: Bit[0] is not cleared by PCI Reset	68 (R/W) Bit[2] is Write-Only	Watch-dog timer Control Bit[0] Watch-dog Status Bit, R/W =1 WD timeout occurred 0 WD timer counting Bit[1] Reserved Bit[2] Force Timeout event; this bit is self-clearing Bit[3] P20 Force Timeout Enable, R/W =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. Note: If the P20 signal is high when the enable bit is set a WD timeout event will be generated. = 0 P20 activity does not generate the WD timeout event. 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. Bit[7:4] Reserved. Set to 0

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	
	dx, SUPERIO_GPIO_PORT + 4	7h
	al, 0Ch	
	dx, al	
	TIME_OUT register	
mov	dx, SUPERIO_GPIO_PORT + 6	5h
mov	al, 80h	;unit is second
out	dx, al	
;WDT_	VAL register	
mov	dx, SUPERIO_GPIO_PORT + 6	6h
mov	al, 03h	;3 seconds
out	dx, al	
;exit		
mov	ah,4ch	
int	21h	

END begin

EPIC-5537

Appendix B

I/O Information

Appendix B I/O Information B-1

EPIC-5537

B.1 I/O Address Map

📴 🛄 Input/output (IO)
[00000000 - 0000000F] Direct memory access controller
[00000020 - 00000021] Programmable interrupt controller
[00000022 - 0000003F] PCI bus
[00000060 - 00000060] PC/AT Enhanced PS/2 Keyboard (101/102-Key)
😼 [00000070 - 00000071] System CMOS/real time clock
😼 [00000072 - 0000007F] PCI bus
😼 [00000087 - 00000087] Direct memory access controller
[000000A0 - 000000A1] Programmable interrupt controller
[000000C0 - 000000DF] Direct memory access controller
[000000E0 - 000000EF] PCI bus
[000000F0 - 000000FF] Numeric data processor
[00000274 - 00000277] ISAPNP Read Data Port
[00000279 - 00000279] ISAPNP Read Data Port
[000002F8 - 000002FF] Communications Port (COM2)
- [00000376 - 00000376] Secondary IDE Channel
🔤 [000003C0 - 000003DF] Advanced Micro Devices Win XP Graphics Driver
- 🔄 [000003F0 - 000003F5] Standard floppy disk controller
- 🔄 [000003F7 - 000003F7] Standard floppy disk controller
7 [000003F8 - 000003FF] Communications Port (COM1)
🖉 [0000F400 - 0000F4FF] VIA VT6421 RAID Controller
- 🗃 [0000F800 - 0000F80F] Standard Dual Channel PCI IDE Controller
🔏 [0000F900 - 0000F91F] VIA VT6421 RAID Controller
🖉 🖉 [0000FA00 - 0000FA0F] VIA VT6421 RAID Controller
🖉 [0000FB00 - 0000FB0F] VIA VT6421 RAID Controller
[0000FC00 - 0000FC0F] VIA VT6421 RAID Controller
[0000FD00 - 0000FD0F] VIA VT6421 RAID Controller
[0000FE00 - 0000FE3F] Intel(R) 8255xER PCI Adapter #2

Appendix B I/O Information B-2

EPIC-5537

B.2 1st MB Memory Address Map

 Interrupt request (IRQ) Memory (0000000 - 0009FFFF) System board (0000000 - 0009FFFF) PCI bus (0000000 - 0008FFFF) Motherboard resources (000F000 - 0008FFFF) Motherboard resources (000000 - 0008FFFF) Motherboard resources (000000 - 0008FFFF) Motherboard resources (000000 - 0008FFFF) Motherboard resources (00000 - 0008FFFF) System board (00000 - 0008FFFF) Intel(R) 8255xER PCI Adapter #2 (EFF8000 - EFF8FFFF) Advanced Micro Devices Win XP Graphics Driver (EFF8000 - EFF8FFFF) Advanced Micro Devices Win XP Graphics Driver (EFF8000 - EFF8FFFF) Advanced Micro Devices Win XP Graphics Driver (EFF8000 - EFF8FFFF) Advanced Micro Devices Win XP Graphics Driver (EFF8000 - EFF8FFFF) Advanced Micro Devices Win XP Graphics Driver (EFF8000 - EFF8FFFF) Advanced Micro Devices Win XP Graphics Driver (EFF8000 - EFF8FFFF) Advanced Micro Devices Win XP Graphics Driver (EFF8000 - EFF8FFFF) Standard Chent Devices Win XP Graphics Driver <li< th=""><th>🔃 🛄 Input/output</th><th>(IO)</th><th></th></li<>	🔃 🛄 Input/output	(IO)	
 [00000000 - 0009FFFF] System board [0009E000 - 0009EFFF] PCI bus [000A0000 - 0008FFFF] PCI bus [000C0000 - 000EFFF] PCI bus [000C0000 - 000EFFF] PCI bus [000E000 - 000EFFF] Motherboard resources [000F000 - 000FFFF] Motherboard resources [000F000 - 000FFFFF] Motherboard resources [000F000 - 00FFFFFF] PCI bus [000F000 - EEFFFFFF] PCI bus [EFF8000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter #2 [EFFE000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFF] Standard Chentroler Devices Win XP Graphics Driver [EFFF000 - EFFFFFFFF] Intel(R) 8255xER PCI Adapter #2 [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter #2 [EFFFF000 - EFFFFFF	主 🛄 Interrupt red	uest (IRQ)	
Image: Construction of the second system of the system	🖹 🛄 Memory		
[000A0000 - 000BFFFF] Advanced Micro Devices Win XP Graphics Driver [000A0000 - 000BFFFF] PCI bus [000C8000 - 000EFFF] PCI bus [000F0000 - 000EFFF] Motherboard resources [000F0000 - 000FFFF] Motherboard resources [000F0000 - 000FFFF] Motherboard resources [000F000 - 000FFFFF] Advanced Micro Devices Win XP Graphics Driver [EFF8000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF0000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF4000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFFF] Advanced Micro Devices Win XP Graphics Driver		00 - 0009FFFF]	System board
 [000A0000 - 000BFFFF] PCI bus [000C8000 - 000EFFFF] PCI bus [000E0000 - 000BFFFF] Motherboard resources [000F0000 - 000FFFFF] Motherboard resources [000F0000 - 000FFFF] Motherboard resources [000F0000 - 000FFFFF] Motherboard resources [000F0000 - 000FFFFF] Motherboard resources [000F000 - 000FFFFF] Motherboard resources [000F000 - 000FFFFF] Motherboard resources [000FC000 - 000FFFFF] System board [00F7C000 - EFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFF6000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF2000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF2000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF4000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF4000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF4000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFF] Standard Enhanced PCI to USB Host Controller [EFFFF000 - EFFFFFFFF] Intel(R) 8255xER PCI Adapter #2 [EFFFF9000 - EFFFFFFFF] Intel(R) 8255xER PCI Adapter [EFFFF9000 - EFFFFFFFF] Intel(R) 8255xER PCI Adapter 		00 - 0009EFFF]	PCI bus
[000C8000 - 000EEFFF] PCI bus [000E0000 - 000EFFFF] Motherboard resources [000F0000 - 000F7FF] Motherboard resources [000F0000 - 000FFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF0000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF6000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF6000 - EFFFFFFF] Geode LX AES Crypto Driver [EFFFF0000 - EFFFFFFF] Standard Enhanced PCI to USB Host Controller [EFFFF0000 - EFFFFFFF] Standard Op		00 - 000BFFFF]	Advanced Micro Devices Win XP Graphics Driver
[000E0000 - 000EFFFF] Motherboard resources [000F0000 - 000F3FFF] Motherboard resources [000F4000 - 000F7FFF] Motherboard resources [000F0000 - 000FFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF4000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF4000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF6000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF0000 - EFFFFFFF] Standard Enhanced PCI to USB Host Controller [EFFFF0000 - EFFFFFFFF] Standard OpenHCD USB Host Controller		00 - 000BFFFF]	PCI bus
[000F0000 - 000F3FFF] Motherboard resources [000F4000 - 000F7FFF] Motherboard resources [000F0000 - 000FFFFF] PCI bus [EF00000 - EFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFF8000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter #2 [EFFF8000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFFF] Standard Enhanced PCI to USB Host Controller [EFFF0000 - EFFFFFFF] Standard OpenHCD USB Host Controller [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter #2 [EFFFF0000 - EFFFFFFFF] Intel(R) 8255xER PCI Adap		00 - 000EEFFF]	PCI bus
Image: Construction of the state of the		00 - 000EFFFF]	Motherboard resources
[000F8000 - 000FBFFF] Motherboard resources [000FC000 - 000FFFFF] Motherboard resources [00100000 - 00FFFFF] System board [007C0000 - FFFEFFF] System board [007C0000 - FFFFFF] System board [007C0000 - FFFFFF] PCI bus [EE000000 - EEFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFF8000 - EFF8FFF] Intel(R) 8255xER PCI Adapter [EFF6000 - EFF8FFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFF8FFF] Advanced Micro Devices Win XP Graphics Driver [EFFF000 - EFFF8FFF] Advanced Micro Devices Win XP Graphics Driver [EFFF000 - EFFF7FFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFF8FFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFF7FFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFF7FFF] Geode LX AES Crypto Driver [EFFF8000 - EFFF7FFF] Standard Denhanced PCI to USB Host Controller [EFFFE000 - EFFFFFFF] Standard OpenHCD USB Host Controller [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter #2 [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter [EFFFF000 - EFFFFFFF] System board		00 - 000F3FFF]	Motherboard resources
[000FC000 - 000FFFFF] Motherboard resources [00100000 - 00FFFFF] System board [0F7C0000 - FFFEFFF] PCI bus [EE000000 - EEFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFF80000 - EFF9FFF] Intel(R) 8255xER PCI Adapter [EFF8000 - EFF9FFF] Intel(R) 8255xER PCI Adapter [EFF8000 - EFF9FFF] Advanced Micro Devices Win XP Graphics Driver [EFFE000 - EFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF000 - EFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF000 - EFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF4000 - EFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFFFF] Geode LX AES Crypto Driver [EFFF8000 - EFFFFFFF] Standard Enhanced PCI to USB Host Controller [EFFFE000 - EFFFFFFF] Standard OpenHCD USB Host Controller [EFFFF000 - EFFFFFF] Intel(R) 8255xER PCI Adapter #2 [EFFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter [EFFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter		00 - 000F7FFF]	Motherboard resources
[00100000 - 00FFFFF] System board [0F7C0000 - FFFEFFF] PCI bus [EE000000 - EEFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFF80000 - EFF9FFF] Intel(R) 8255xER PCI Adapter [EFF80000 - EFF9FFF] Intel(R) 8255xER PCI Adapter [EFF60000 - EFF9FFF] Intel(R) 8255xER PCI Adapter #2 [EFFE8000 - EFF9FFF] Advanced Micro Devices Win XP Graphics Driver [EFFF0000 - EFFF9FF] Advanced Micro Devices Win XP Graphics Driver [EFFF0000 - EFFF9FF] Advanced Micro Devices Win XP Graphics Driver [EFFF4000 - EFFF9FF] Advanced Micro Devices Win XP Graphics Driver [EFFF4000 - EFFF9FFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFF9FFF] Geode LX AES Crypto Driver [EFFF8000 - EFFF9FFF] Standard Enhanced PCI to USB Host Controller [EFFF0000 - EFFF0FFF] Standard OpenHCD USB Host Controller [EFFF6000 - EFFF9FFF] Intel(R) 8255xER PCI Adapter #2 [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter		00 - 000FBFFF]	Motherboard resources
Image: Construction of the second system of the system		00 - 000FFFFF]	Motherboard resources
Image: Second	🧕 [001000	00 - 00FFFFFF]	System board
 [EFF80000 - EFF9FFFF] Intel(R) 8255xER PCI Adapter [EFFA0000 - EFF8FFFF] Intel(R) 8255xER PCI Adapter #2 [EFFE8000 - EFF8FFF] Advanced Micro Devices Win XP Graphics Driver [EFFF0000 - EFFFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF0000 - EFFF7FF] Advanced Micro Devices Win XP Graphics Driver [EFFF4000 - EFFF7FF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFF7FFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFF7FFF] Geode LX AES Crypto Driver [EFFF000 - EFFF7FFF] Standard Enhanced PCI to USB Host Controller [EFFFE000 - EFFF0FFF] Intel(R) 8255xER PCI Adapter #2 [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter [EFEFF000 - EFFFFFFF] System board 		DO - FFFEFFFF]	PCI bus
Image: CEFFA0000 - EFFBFFFF] Intel(R) 8255xER PCI Adapter #2 Image: CEFFE8000 - EFFEBFFF Advanced Micro Devices Win XP Graphics Driver Image: CEFFE0000 - EFFEFFFF Advanced Micro Devices Win XP Graphics Driver Image: CEFFE0000 - EFFFFFFF Advanced Micro Devices Win XP Graphics Driver Image: CEFFF0000 - EFFFFFFF Advanced Micro Devices Win XP Graphics Driver Image: CEFFF0000 - EFFFFFFF Geode LX AES Crypto Driver Image: CEFFF0000 - EFFFFFFF Geode LX AES Crypto Driver Image: CEFFF0000 - EFFFFFFF Standard Enhanced PCI to USB Host Controller Image: CEFFF0000 - EFFFFFFF Standard OpenHCD USB Host Controller Image: CEFFF0000 - EFFFFFFF Intel(R) 8255xER PCI Adapter #2 Image: CEFFFF0000 - EFFFFFFFF Intel(R) 8255xER PCI Adapter Image: CEFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF		00 - EEFFFFFF]	Advanced Micro Devices Win XP Graphics Driver
Image: CEFFE8000 - EFFE8FFF] Advanced Micro Devices Win XP Graphics Driver Image: CEFFE0000 - EFFEFFFF] Advanced Micro Devices Win XP Graphics Driver Image: CEFFE0000 - EFFFFFFF] Advanced Micro Devices Win XP Graphics Driver Image: CEFFF0000 - EFFFFFF] Advanced Micro Devices Win XP Graphics Driver Image: CEFFF0000 - EFFFFFF] Geode LX AES Crypto Driver Image: CEFFF0000 - EFFFFFF] Geode LX AES Crypto Driver Image: CEFFF0000 - EFFFFFF] Standard Enhanced PCI to USB Host Controller Image: CEFFF0000 - EFFFFFF] Standard OpenHCD USB Host Controller Image: CEFFF0000 - EFFFFFF] Intel(R) 8255xER PCI Adapter #2 Image: CEFFFF0000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter Image: CEFFFF0000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter Image: CEFFFFF000 - EEFFFFFF] System board		00 - EFF9FFFF]	Intel(R) 8255xER PCI Adapter
[EFFEC000 - EFFEFFFF] Advanced Micro Devices Win XP Graphics Driver [EFFF0000 - EFFF3FFF] Advanced Micro Devices Win XP Graphics Driver [EFFF4000 - EFFF7FFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFF7FFF] Geode LX AES Crypto Driver [EFFF6000 - EFFF7FFF] Geode LX AES Crypto Driver [EFFF6000 - EFFF7FFF] Standard Enhanced PCI to USB Host Controller [EFFF0000 - EFFF7FFF] Standard OpenHCD USB Host Controller [EFFF6000 - EFFF7FFF] Intel(R) 8255xER PCI Adapter #2 [EFFF7000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter [EFFE0000 - FE0FFFF] System board	🕮 (EFFA00	DO - EFFBFFFF]	Intel(R) 8255xER PCI Adapter #2
Image: Second		00 - EFFEBFFF]	Advanced Micro Devices Win XP Graphics Driver
 [EFFF4000 - EFFF7FFF] Advanced Micro Devices Win XP Graphics Driver [EFFF8000 - EFFFBFFF] Geode LX AES Crypto Driver [EFFFC000 - EFFFCFFF] Standard Enhanced PCI to USB Host Controller [EFFFD000 - EFFFDFFF] Standard OpenHCD USB Host Controller [EFFFE000 - EFFFFFF] Intel(R) 8255xER PCI Adapter #2 [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter [EFEFF0000 - FEFFFFFF] System board 	EFFECO	DO - EFFEFFFF]	Advanced Micro Devices Win XP Graphics Driver
 [EFFF8000 - EFFFBFFF] Geode LX AES Crypto Driver [EFFFC000 - EFFFCFFF] Standard Enhanced PCI to USB Host Controller [EFFFD000 - EFFFDFFF] Standard OpenHCD USB Host Controller [EFFFE000 - EFFFFFF] Intel(R) 8255xER PCI Adapter #2 [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter [EFEFF000 - EFFFFFFF] System board 		00 - EFFF3FFF]	Advanced Micro Devices Win XP Graphics Driver
 [EFFFC000 - EFFFCFFF] Standard Enhanced PCI to USB Host Controller [EFFFD000 - EFFFDFFF] Standard OpenHCD USB Host Controller [EFFFE000 - EFFFFFF] Intel(R) 8255xER PCI Adapter #2 [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter [EFEFF000 - EFFFFFFF] System board 		00 - EFFF7FFF]	Advanced Micro Devices Win XP Graphics Driver
 EFFFD000 - EFFFDFFF] Standard OpenHCD USB Host Controller EFFFE000 - EFFFEFFF] Intel(R) 8255xER PCI Adapter #2 EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter EFFFF000 - FEE0FFFF] System board 		00 - EFFFBFFF]	Geode LX AES Crypto Driver
[EFFFE000 - EFFFEFFF] Intel(R) 8255xER PCI Adapter #2 [EFFFF000 - EFFFFFFF] Intel(R) 8255xER PCI Adapter [] [FEE00000 - FEE0FFFF] System board	ංදී [EFFFCO	DO - EFFFCFFF]	Standard Enhanced PCI to USB Host Controller
[EFFFF000 - EFFFFFF] Intel(R) 8255xER PCI Adapter [] [FEE00000 - FEE0FFFF] System board	🔫 (EFFFDO	00 - EFFFDFFF]	Standard OpenHCD USB Host Controller
💆 [FEE00000 - FEE0FFFF] System board	EFFFEO	00 - EFFFEFFF]	Intel(R) 8255xER PCI Adapter #2
3.	EFFFO	00 - EFFFFFFF]	Intel(R) 8255xER PCI Adapter
📖 🕎 [FFFC0000 - FFFFFFF] System board		00 - FEEOFFFF]	System board
	🧝 (FFFC00	DO - FFFFFFFF]	System board

EPIC-5537

B.3 IRQ Mapping Chart

🖃 🖳 DS-TEST	
🗄 🛄 Direct memor	y access (DMA)
🕂 🛄 Input/output	(IO)
🚊 🛄 Interrupt req	uest (IRQ)
— 🛃 (ISA) O	System timer
	PC/AT Enhanced PS/2 Keyboard (101/102-Key)
— 🍠 (ISA) 3	Communications Port (COM2)
— 🍠 (ISA) 4	Communications Port (COM1)
- 🔁 (ISA) 6	Standard floppy disk controller
— 夏 (ISA) 8	System CMOS/real time clock
— 🐌 (ISA) 12	Microsoft PS/2 Mouse
— 🧕 (ISA) 13	Numeric data processor
- 🔁 (ISA) 14	Primary IDE Channel
📲 (PCI) 5	Intel(R) 8255xER PCI Adapter #2
ିକ୍ଟ୍ସେ (PCI) 5	Standard Enhanced PCI to USB Host Controller
ିକ୍ଟ୍ସ୍ (PCI) 5	Standard OpenHCD USB Host Controller
- 🗐 (PCI) 7	GeodeLX Audio Driver (WDM)
— 🧕 (PCI) 10	Advanced Micro Devices Win XP Graphics Driver
	Geode LX AES Crypto Driver
- 🎟 (PCI) 10	Intel(R) 8255×ER PCI Adapter
	VIA VT6421 RAID Controller
🛨 🛄 Memory	

B.4 DMA Channel Assignments



EPIC-5537



Mating Connecotor

Appendix C Mating Connector C - 1

C.1 List of Mating Connectors and Cables

The table notes mating connectors and available cables.

Connector Label	Function	Mating C	Mating Connector		Cable P/N
		Vendor	Model no		
CN1	Power connector	Ho-base	5.08mm Pitch 4 pins (5082A-WS-4)	Power in connector (+12V)	
CN4	Primary EIDE Connector	Catch	2.0mm Pitch 44 pins (1147-000-44S or compatible)	IDE cable	1701440500
CN7	Digital I/O Connector	Ho-base	2.0mm Pitch 10 pins	Digital I/O cable	N/A
CN10	Keyboard/M ouse Connector	Ho-base	2.0mm Pitch 6 pins (2005-2WS-6 or compatible)	Keyboard /Mouse cable	1700060152
CN11	FAN Connector	Catch	2.54mm Pitch 3 pins (1190-700-03S or compatible)	FAN cable	N/A
CN13	COM2 Connector	Catch	2.0mm Pitch 10 pins (1147-000-10S or compatible)	COM cable	1701100206
CN15	TFT LCD Connector	E-call	1.25mm Pitch 40 pins (0110-01-553-400 or compatible)	TFT LCD cable	N/A
CN16	LVDS Connector	E-call	1.25mm Pitch 30 pins (0110-01-553-300 or compatible)	LVDS cable	N/A
CN18	Audio Connector	Astron	2.0mm Pitch 14 pins (26-4101-207-1G- R)	Audio cable	1700140510