



Main Board

EPIA-P710

Revision 1

Operating Guide

Version 1.4

September 17, 2008

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REVISION HISTORY

Document Release	Date	Revision	Initials
Version 1.0	5/09, 2008	- Initial internal release	Steven Huang
Version 1.0.1	6/10, 2008	- Modify Pin Assignment	Steven Huang
Version 1.1	6/24, 2008	- Update Placement View - Update Block Diagram - Modify Pin Header & Connector List - Modify Pin Header & Connector Pin Assignment	Steven Huang
Version 1.2	6/27, 2008	- Modify Pin Header & Connector Spec. List	Steven Huang
Version 1.2.1	07/04, 2008	- Update Dimension Diagram	Steven Huang
Version 1.3	07/14, 2008	- Update Dimension Diagram - Add I/O Diagram	Steven Huang
Version 1.4	09/17, 2008	- Modify Specification	Steven Huang



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FOREWORD

This document specifies the Operating Guide that for easy to know what basic function inside in short time on the EPIA-P710 MotherBoard, including Introduction, Specification, Block Diagram, Placement View, Jumper Setting, Pin Header & Connector List, Pin Header & Connector Pin Assignment, Pin Header & Connector Specification List and Dimension Diagram etc..



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Operating Guide of EPIA-P710

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1. Introduction

The EPIA-P710 main board is a highly integrated IBM PC/AT compatible system board, designed to accommodate the ALL-IN-ONE System Processor VX800 series and support 533 / 400 MHz FSB VIA C7/Eden Processor. The EPIA-P710 main board consists of VIA chipset which included the VIA VX800 that combine with North Bridge system controller and South Bridge in one chip and VT6122 GigaLAN controller, High Definition Audio Codec VT1708B etc., In addition, with SUMIT daughter board which specified QMS/QFS connector for support USB, LPC, PCI-E, SMBus and SPI interface etc..

2. Specification

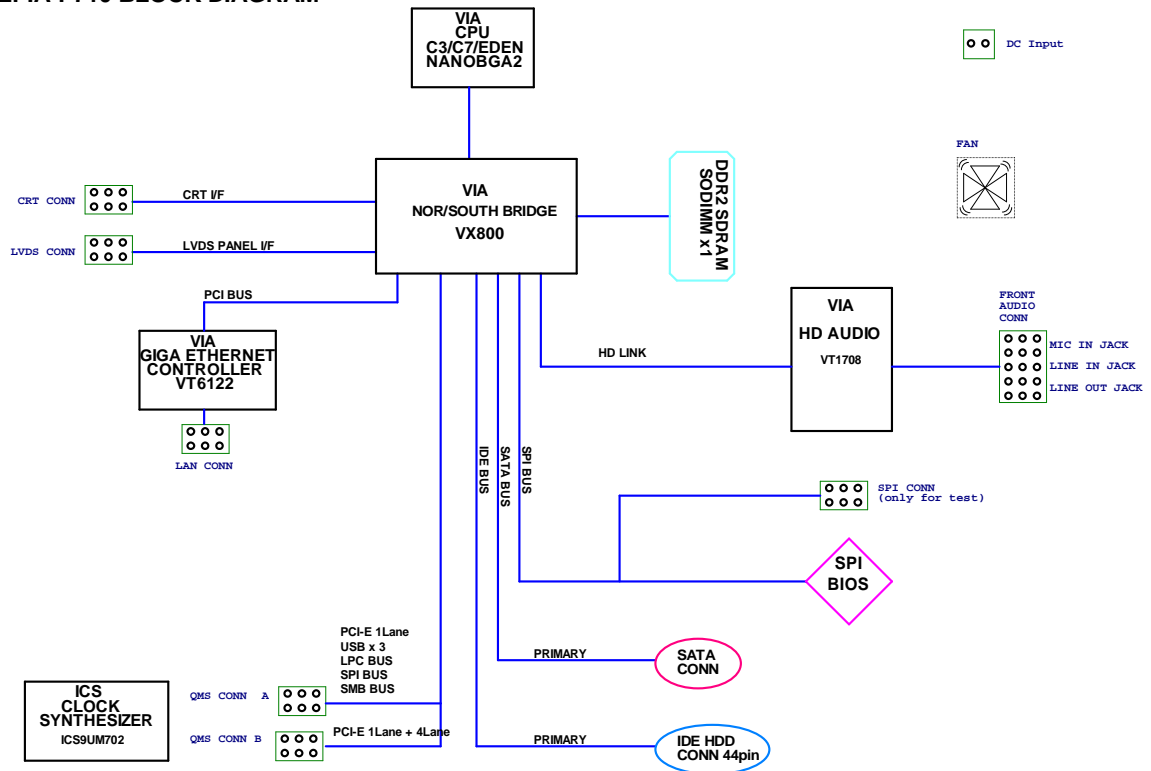
Items	Description
PCB size	<ul style="list-style-type: none"> - Pico-iTX form factor - Propriety Size 100mm x 72mm with 12 layer - Board Thickness 1.6mm
CPU type	<ul style="list-style-type: none"> - VIA Eden 1.0GHz nanoBGA2 Processor. - Two large (64KB each,4-way) Level 1 caches - 128KB Level 2 victim caches (32-way) - nanoBGA2 package 21mm x 21mm (400 balls)
Core Logic Chipset (VIA VX800)	<ul style="list-style-type: none"> - All-In-One System Processor. - 800 / 533 / 400 MHz FSB VIA C7/Eden Processor. - DDR2 667 / 533 / 400 SDRAM Controller - Integrated Chrome9 HC DX9 3D / 2D Graphics & Video Processor - Unified Video Decoding Accelerator - Three PCI Express Ports: 4-Lane & Two 1-Lane - Integrated LVDS Transmitter - High Definition Audio Controller - One UltraDMA-133 EIDE Channel - Six USB 2.0 / 1.1 Ports - PCI 32-bit 33MHz Bus - UART Ports, IR, SPI, RTC, LPC and SMBus - ACPI and Sophisticated Power Management
Memory	<ul style="list-style-type: none"> - One DDR2 SDRAM 200pin SO-DIMM socket up to 1GB
PCI - Express	<ul style="list-style-type: none"> - Integrated in VX800 - 1+1+4 Lane
Serial ATA	<ul style="list-style-type: none"> - Integrated in VX800 - One Port
Parallel ATA (IDE)	<ul style="list-style-type: none"> - IDE Primary Master, with 44 Pins Connector
Ethernet LAN	<ul style="list-style-type: none"> - VIA VT6122 GigaLAN Controller
USB	<ul style="list-style-type: none"> - Integrated in VX800. - USB v1.1 and v2.0 compatible.
Audio	<ul style="list-style-type: none"> - VIA VT1708B HD Audio Codec, compatible with AC'97 spec.
KB/Mouse Controller	<ul style="list-style-type: none"> - Integrated in VX800. - Support PS/2 KB & Mouse.
Display	<ul style="list-style-type: none"> - D-sub 15 Pins Analog RGB output - LCD Panel support through 1 Channel LVDS interface
Clock Generator	<ul style="list-style-type: none"> - ICS 9UM702 SSOP.
BIOS	<ul style="list-style-type: none"> - Award, 2/4/8M SPI interface Flash ROM.
Real Time Clock	<ul style="list-style-type: none"> - Integrated in VX800 and with external battery.



I/O Ports	<ul style="list-style-type: none">- Customer Specified QMS Connector x 2 (USBx3, LPC, PCI-E, SMBus and SPI)- Single Channel LVDS Connector- Pin Header CRT Connector- Pin Header Front Panel with Power and Reset Switch- Pin Header Audio Jack with Line-In, Line-Out and Mic-In- Pin Header GigaLAN Connector- Jumper Pin for CMOS Clear (with 3Pins)- Jumper Pin for LVDS Power Select- FAN Connector x1- Battery Connector x1- SATA Power Connector x1
OS	- Windows XP Embedded
Power	- +12V DC Input with 2 Pins connector

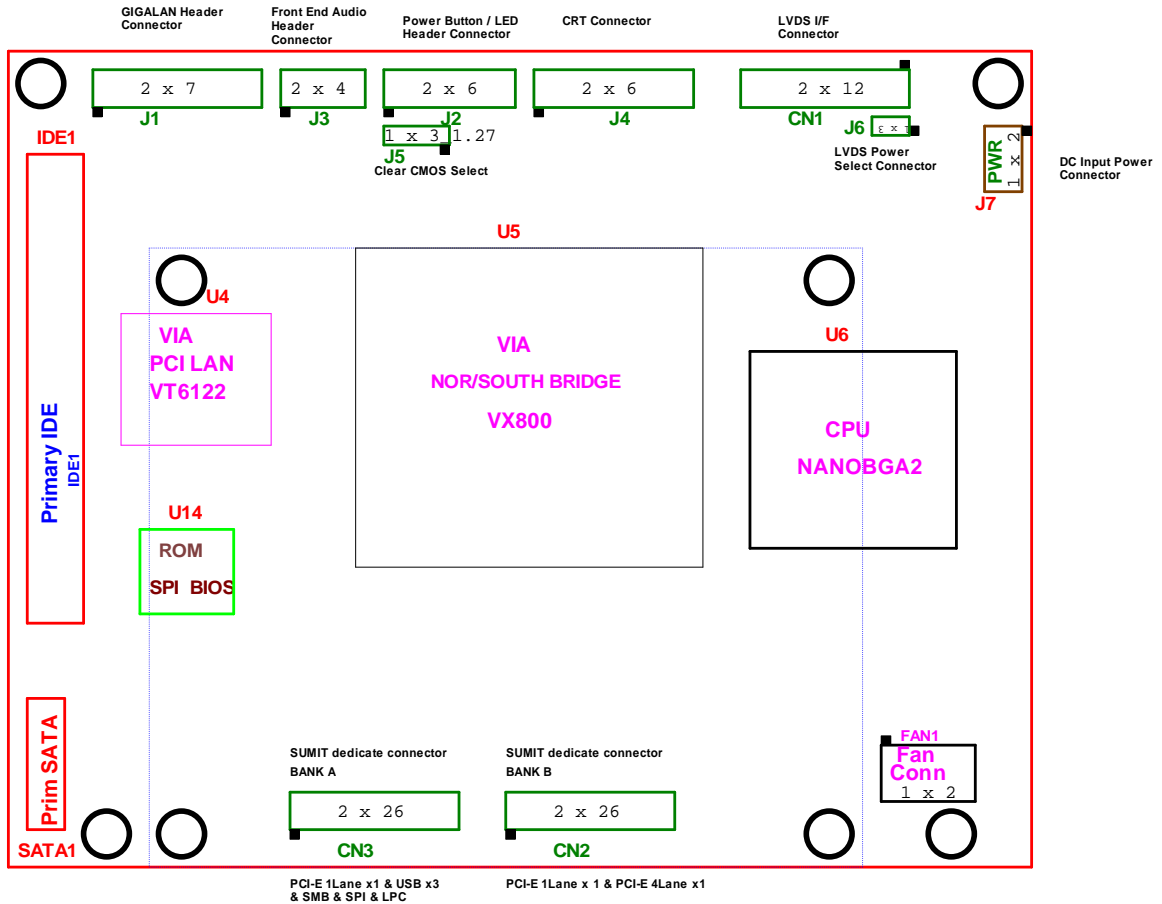
3. Block Diagram :

EPIA-P710 BLOCK DIAGRAM



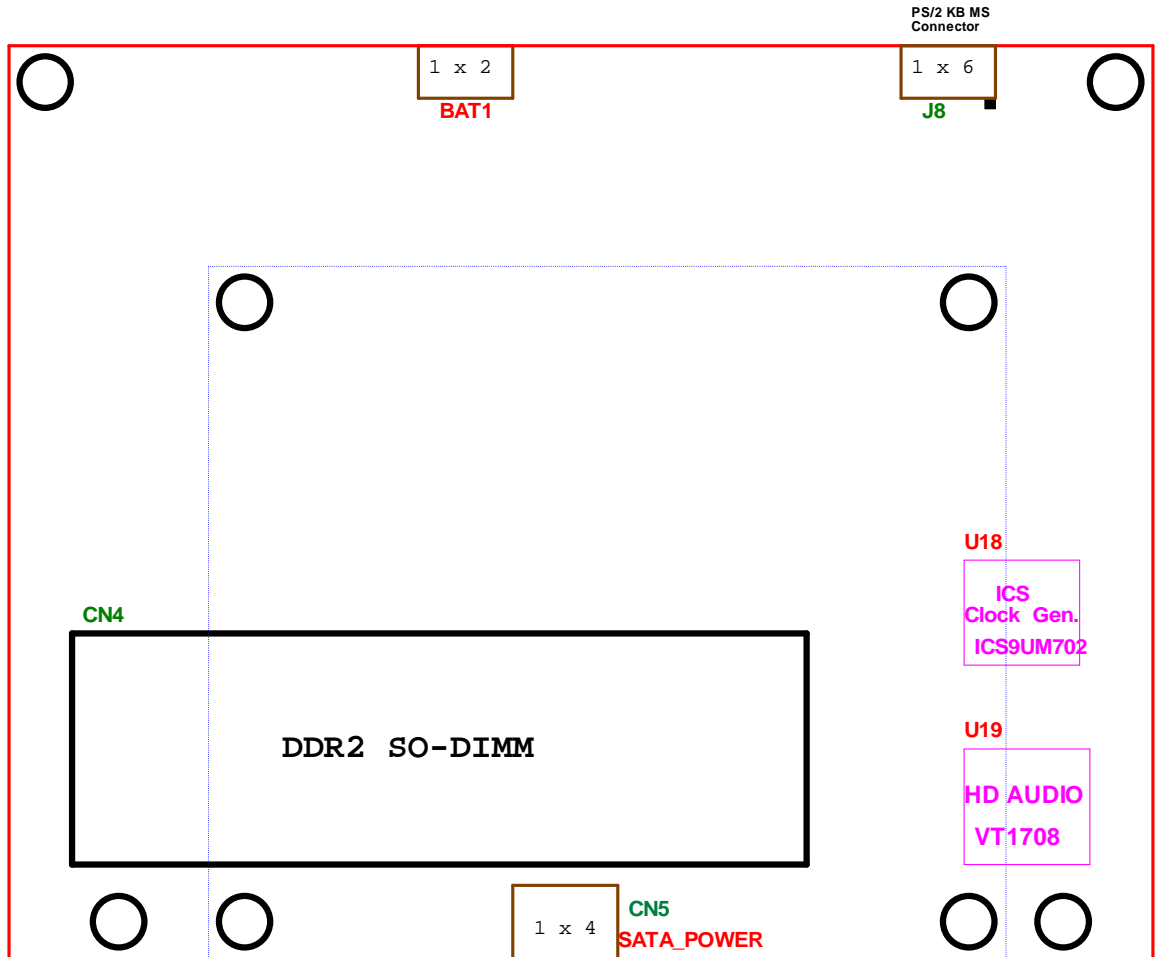
4. Placement View

4.1 Placement View (Top side):



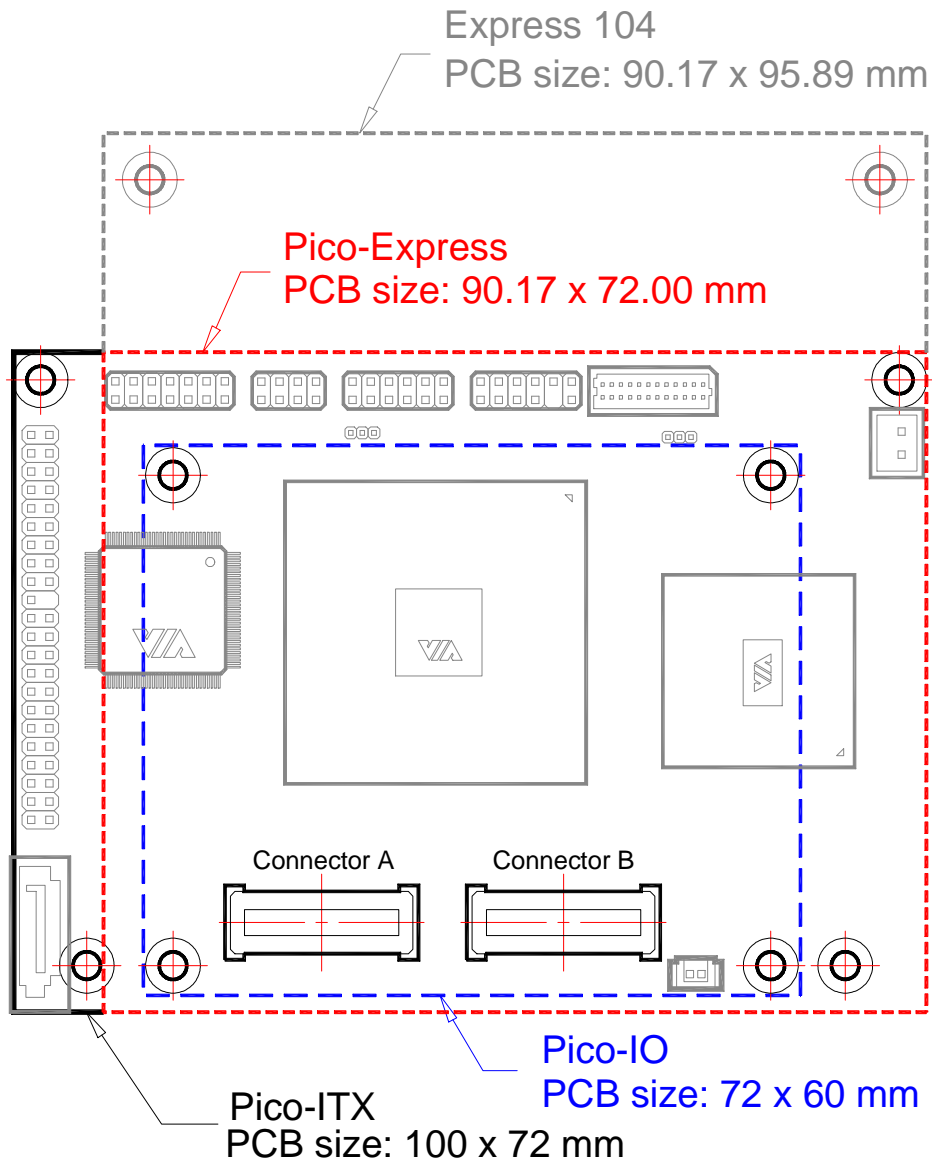
TOP VIEW

4.2 Placement View (Bottom side):



BOTTOM VIEW

4.3 I/O Diagram :





5. Jumper Setting (Default setting is marked “ * “)

5.1 J5: Clear CMOS

J5	
1-2 *	Normal
2-3	Clear CMOS

5.2 J6: LCD Panel Power Select

J6	
1-2	+5V
2-3 *	+3V



6. Pin Header & Connector List

Item	Function
CN1	LVDS I/F Connector
CN2	SUMIT Dedicate Connector – BANK B
CN3	SUMIT Dedicate Connector – BANK A
CN4	DDR2 SO-DIMM Socket
CN5	SATA Power Connector
J1	Giga LAN Header Connector
J2	Power Button / LED Header Connector
J3	Front End Audio Header Connector
J4	CRT Connector
J5	Clear CMOS Select Jumper
J6	LVDS Power Select Jumper
J7	DC Input Power Connector
J8	PS/2 KB & MS Connector
IDE1	Primary IDE / PATA 44pin
SATA1	Primary SATA
BAT1	CMOS Battery Connector
FAN1	CPU FAN Connector

7. Pin Header & Connector Pin Assignment

7.1 CN1 : LVDS I/F Connector

CN1			
Pin No.	Signal	Pin No.	Signal
1	LCD1D0-	2	LCD1D1-
3	LCD1D0+	4	LCD1D1+
5	GND	6	GND
7	PVDD2	8	LCD1D2-
9	PVDD2	10	LCD1D2+
11	LCD1_DATA	12	GND
13	LCD1_CLK	14	LCD1CLK+
15	GND	16	LCD1CLK-
17	VDD_BL	18	GND
19	VDD_BL	20	DIMMING
21	VDD_BL	22	BLN_1
23	GND	24	GND

7.2 CN2 : SUMIT Dedicate Connector (QMS Board to Board) – BANK B

CN2 – BANK B			
Pin No.	Signal	Pin No.	Signal
1	GND	2	GND
3	B_PETp0 (w/0.1uf)	4	B_PERp0
5	B_PETn0 (w/0.1uf)	6	B_PERn0
7	GND	8	-B_PRST/GND GPIO0 (w/0ohm)
9	C_CLKp	10	B_CLKp
11	C_CLKn	12	B_CLKn
13	-C_PRST/GND GPIO1 (w/0 ohm)	14	GND
15	C_PETp0 (w/0.1uf)	16	C_PERp0
17	C_PETn0 (w/0.1uf)	18	C_PERn0
19	GND	20	GND
21	C_PETp1 (w/0.1uf)	22	C_PERp1
23	C_PETn1 (w/0.1uf)	24	C_PERn1
25	GND	26	GND
27	C_PETp2 (w/0.1uf)	28	C_PERp2
29	C_PETn2 (w/0.1uf)	30	C_PERn2
31	GND	32	GND
33	C_PETp3 (w/0.1uf)	34	C_PERp3
35	C_PETn3 (w/0.1uf)	36	C_PERn3
37	GND	38	GND
39	-PCIRST1	40	-WAKE
41	+1.5V (w/0 ohm)	42	-PCIRST1 (w/0ohm)
43	USBVCC	44	NA
45	USBVCC	46	+3.3V
47	USBVCC	48	+3.3V
49	USBVCC	50	+3.3V
51	USBVCC	52	+5VSUS

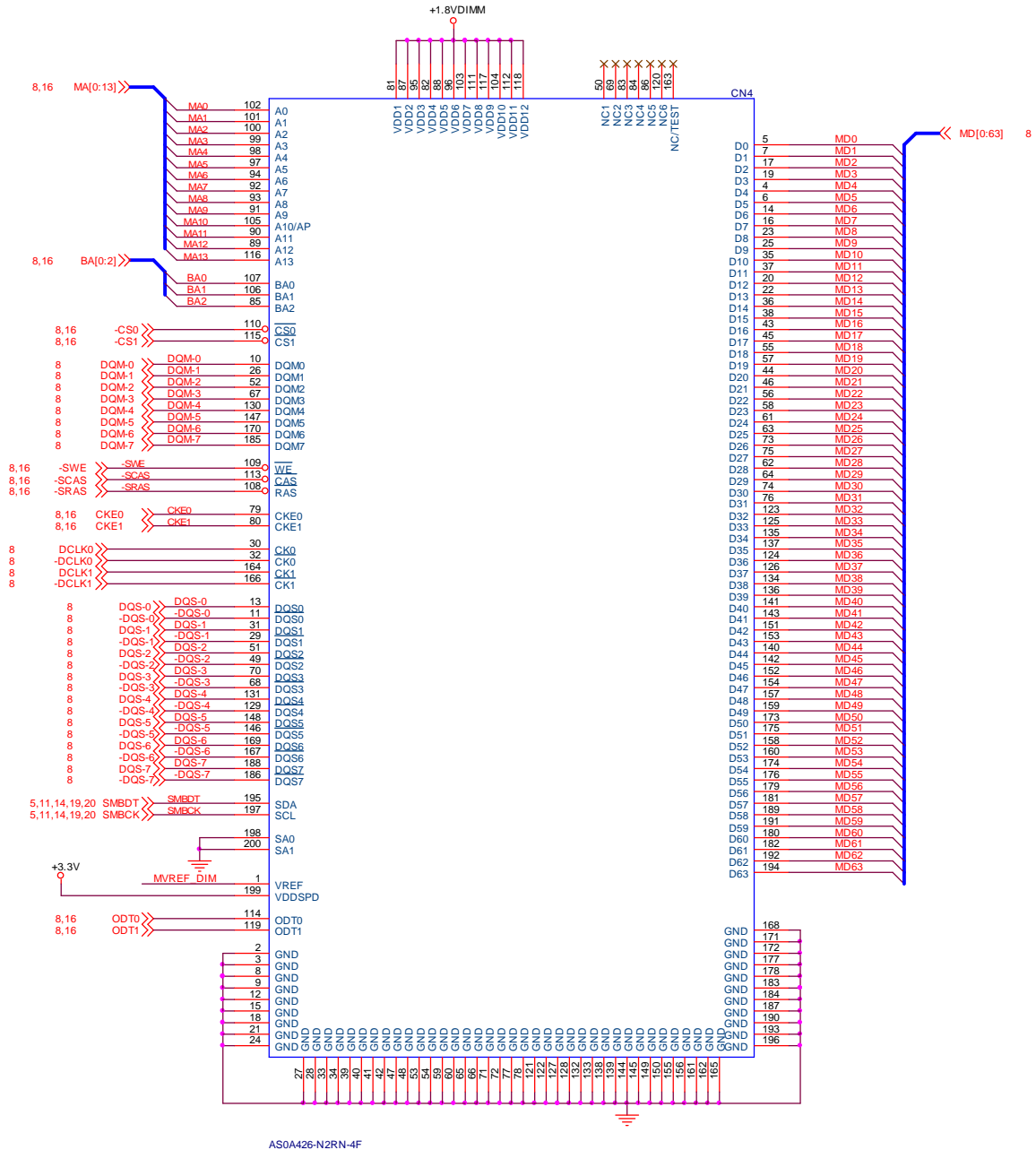


7.3 CN3: SUMIT Dedicate Connector (QMS Board to Board) – BANK A

CN3 – BANK A			
Pin No.	Signal	Pin No.	Signal
1	+5VSUS	2	+12V
3	+3.3V	4	SMBDT
5	+3.3V	6	SMBCK
7	-CLKREQ	8	-SMBALT
9	-EXPCD_PRSENT -CPPE (w/0ohm)	10	SPIDO
11	-OC0/1	12	SPIDI
13	NA	14	SPICLK
15	NA	16	-SPISS0
17	NA	18	-SPISS1
19	NA	20	SIOOSC (w/0ohm)
21	USBVCC	22	-LDRQ (w/0ohm)
23	USB_VD2+	24	LAD0
25	USB_VD2-	26	LAD1
27	USBVCC	28	LAD2
29	USB_VD1+	30	LAD3
31	USB_VD1-	32	-LFRAME
33	USBVCC	34	SERIRQ
35	USB_VD0+	36	-LPC_PRSENT/GND GPIO8 (w/0ohm)
37	USB_VD0-	38	PCLKLPC
39	GND	40	GND
41	A_PETp0 (w/0.1uf)	42	A_PERp0
43	A_PETn0 (w/0.1uf)	44	A_PERn0
45	GND	46	-A_PRSENT/GND GPIO9 (w/0ohm)
47	-PCIERST0	48	A_CLKp
49	-WAKE	50	A_CLKn
51	USBVCC	52	GND



7.4 CN4: DDR2 SO-DIMM Socket



AS0A426-N2RN-4F

7.5 CN5: SATA Power Connector

CN5	
Pin No.	Signal
1	+5V
2	+5V
3	GND
4	GND

7.6 J1 : Giga LAN Header Connector

J1			
Pin No.	Signal	Pin No.	Signal
1	A3V3GL	2	+3.3VSUS
3	TXNC	4	TXND
5	TXPC	6	TXPD
7	TXNA	8	TXNB
9	TXPA	10	TXPB
11	GND	12	LED1
13	LED2	14	LNK_ACT

7.7 J2 : Power Button / LED Header Connector

J2			
Pin No.	Signal	Pin No.	Signal
1	PW_LED (+)	2	HD_LED (+)
3	PW_LED (+)	4	HD_LED (-)
5	GND	6	PW_BN-
7	SPEAK_BZ	8	GND
9	GND	10	RST_SW
11	SUS_LED	12	GND

7.8 J3 : Front End Audio Header Connector

J3			
Pin No.	Signal	Pin No.	Signal
1	LINER	2	GND_AUD
3	LINEL	4	MICIN
5	LINEOUTR	6	AD_5V
7	LINEOUTL	8	SENSE_A

7.9 J4: CRT Connector

J4			
Pin No.	Signal	Pin No.	Signal
1	RED	2	+5VCRT
3	GREEN	4	GND
5	BLUE	6	DDCDATA
7	GND	8	DDCCLK
9	NA	10	VSYNC
11	HSYNC	12	GND

7.10 J5: Clear CMOS Select Jumper

J5	
Pin No.	Signal
1	+3.3VSUS
2	VBAT
3	GND (w/1K ohm)

7.11 J6: LVDS Power Select Jumper

J6	
Pin No.	Signal
1	+5V
2	Connector to Q4 Pin1,2
3	+3.3V

7.12 J7: DC Input Power Connector

J7	
Pin No.	Signal
1	+12V
2	GND

7.13 J8: PS/2 KB & MS Connector

J8	
Pin No.	Signal
1	+5VSUS
2	GND
3	KB_CLK
4	KB_DATA
5	MS_CLK
6	MS_DATA



7.14 IDE1: Primary IDE / PATA 44Pin

IDE1			
Pin No.	Signal	Pin No.	Signal
1	-IDERST	2	GND
3	PD_7	4	PD_8
5	PD_6	6	PD_9
7	PD_5	8	PD_10
9	PD_4	10	PD_11
11	PD_3	12	PD_12
13	PD_2	14	PD_13
15	PD_1	16	PD_14
17	PD_0	18	PD_15
19	GND	20	NA
21	PDREQ	22	GND
23	-PIOW	24	GND
25	-PIOR	26	GND
27	PRY	28	GND (w/470 ohm)
29	PDAK	30	GND
31	IRQ15	32	NA
33	PD_A1	34	PD33_-66
35	PD_A0	36	PD_A2
37	-PCS_1	38	-PCS_3
39	-HD_LED1	40	GND
41	+5V	42	+5V
43	GND	44	NA

7.15 SATA1: Primary SATA

SATA1	
Pin No.	Signal
1	GND
2	STXP_1
3	STXN_1
4	GND
5	SRXN_1
6	SRXP_1
7	GND

7.16 BAT1: CMOS Battery Connector

BAT1	
Pin No.	Signal
1	Connect to J5 pin1 (w/ resistor & diode)
2	GND

7.17 FAN1: CPU FAN Connector

FAN1	
Pin No.	Signal
1	+5V
2	GND

8 Pin Header & Connector Spec. List :

Location	Description	Note
CN1	WIRE TO BOARD CONN 87216-2416-06 2*12PIN/1.0mm SMD IVORY,PA6T W/CAP STRAIGHT,H=4.6mm ACES	
CN2	BOARD TO BOARD CONN ASP-129637-01 2*26PIN/0.635mm SMD BLACK,LCP MALE STRAIGHT,H=8.688mm,W/CAP SAMTEC	
CN3	BOARD TO BOARD CONN ASP-129637-01 2*26PIN/0.635mm SMD BLACK,LCP MALE STRAIGHT,H=8.688mm,W/CAP SAMTEC	
CN4	SOCKET DDR2 SODIMM AS0A426-N2RN-4F 200PIN/0.6mm SMD REVERSE TYPE H:5.2mm 1.8V, 10u" GOLD FOXCONN	
CN5	CONN WAFER 1251R-04-SM1-TR 1*4PIN/1.25mm SMD RIGHT ANGLE WHITE,PA46, Neltron	
J1	CONN HEADER 2208SM-14G-BK-CP 2*7PIN/2.0mm SMD BLACK,PA6T W/CAP, Neltron	
J2	CONN HEADER 2208SM-12G-CP 2*6PIN/2.00mm SMD STRAIGHT IVORY,PA6T W/CAP, Neltron	
J3	CONN HEADER 2208SM-08G-BK-CP 2*4PIN/2.00mm SMD BLACK,PA6T W/CAP, Neltron	
J4	CONN HEADER 2208SM-12G-E9-BK-CP 2*6PIN/2.0mm SMD STRAIGHT BLACK,PA6T 抽第9PIN,W/CAP, Neltron	
J5	CONN HEADER 2199SA-03G-301523 1*3PIN/1.27mm DIP STRAIGHT BLACK,PA6T, Neltron	
J6	CONN HEADER 2199SA-03G-301523 1*3PIN/1.27mm DIP STRAIGHT BLACK,PA6T, Neltron	
J7	CONN WAFER 2317SJ-02-F4 1*2PIN/2.5mm DIP STRAIGHT WHITE,PA66, Neltron	
J8	CONN WAFER 1600R-06-SM-TR 1*6PIN/1.0mm SMD RIGHT ANGLE WHITE,PA46, Neltron	
IDE1	CONN HEADER 2208S-44G-BK-E01-F2 2*22PIN/2.0mm DIP STRIGHT BLACK 抽第20PIN, Neltron	
SATA1	CONN MIX SERIAL ATA CONN 030B07-04100A-T2 1*7PIN DIP STRAIGHT 慶良	
BAT1	CONN WAFER 1251R-02-SM1-TR 1*2PIN/1.25mm SMD RIGHT ANGLE WHITE,PA46, Neltron	
FAN1	CONN WAFER DF13C-2P-1.25V(21) 1*2PIN/1.25mm SMD STRAIGHT IVORY,PA6T HIROSE	

9 Dimension Diagram

9.1 Dimension and Mounting Hole Location-1 :

