EX-92630 Box PC
User Manual

Release Date	Revision
June 2006	V0.1

Warning!

This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, it may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Electric Shock Hazard – Do not operate the machine with its back cover removed. There are dangerous high voltages inside.

Disclaimer

This information in this document is subject to change without notice.

Table of Contents

Chapter 1 Getting Started

1.1 Features

- Intel Celeron M CPU with speed of 600MHz non L2 cache
- Fanless design
- Intel 852GM + ICH4
- 200-pin DDR SO-DIMM with up to 1GB
- 1 x 10/100 Ethernet LAN, 1 x VGA connector
- 2 x RS-232, 1 x RS-232/422/485 serial port
- 1 x compact flash, 1 x 2.5” anti-vibration slim HDD
- DC11~28V wide-ranging power input

1.2 Specifications

System

CPU:
Intel Celeron M 600MHz non L2 cache
Chipset:
Intel® 852GM+ICH4
System Memory:
DDR SO-DIMM with 256MB up to 1GB
DRAM Socket:
One 200-pin SO-DIMM
Drive Bay:
1 x compact flash, 1 x 2.5” anti-vibration slim HDD
BIOS:
Award Flash
Watchdog Timer:
Generates system reset, 256 levels
I/O Port:
2 COM ports, one SPP/ECP/EPP port, two USB2.0 ports, two PS/2 keyboard and mouse ports
RJ-45 LAN Port:
1 x 10/100Mbps
VGA:
Built-in Intel® 852GM+ICH4

Digital I/O:
4 in and 4 out (optional)
Certifications:
FCC & CE Class A certified

Mechanical

Construction:
Heavy-duty steel chassis
Color:
Blue
Dimensions:
229.5(W) x 73.7(D) x 221mm(H)

Power Supply:
DC11~28V wide-ranging power input with 60W power adapter

Environment

Operating temperature:
0~60 ° C
Storage temperature:
-20 ° C ~ 80 ° C
Relative humidity:
10~90% @ 40 ° C non-condensing
Vibration:
5~17Hz, 0.1” double amplitude displacement
17~640Hz, 1.5G acceleration peak to peak
Shock:
10G acceleration peak to peak (11 millimeters)

1.3 Dimensions

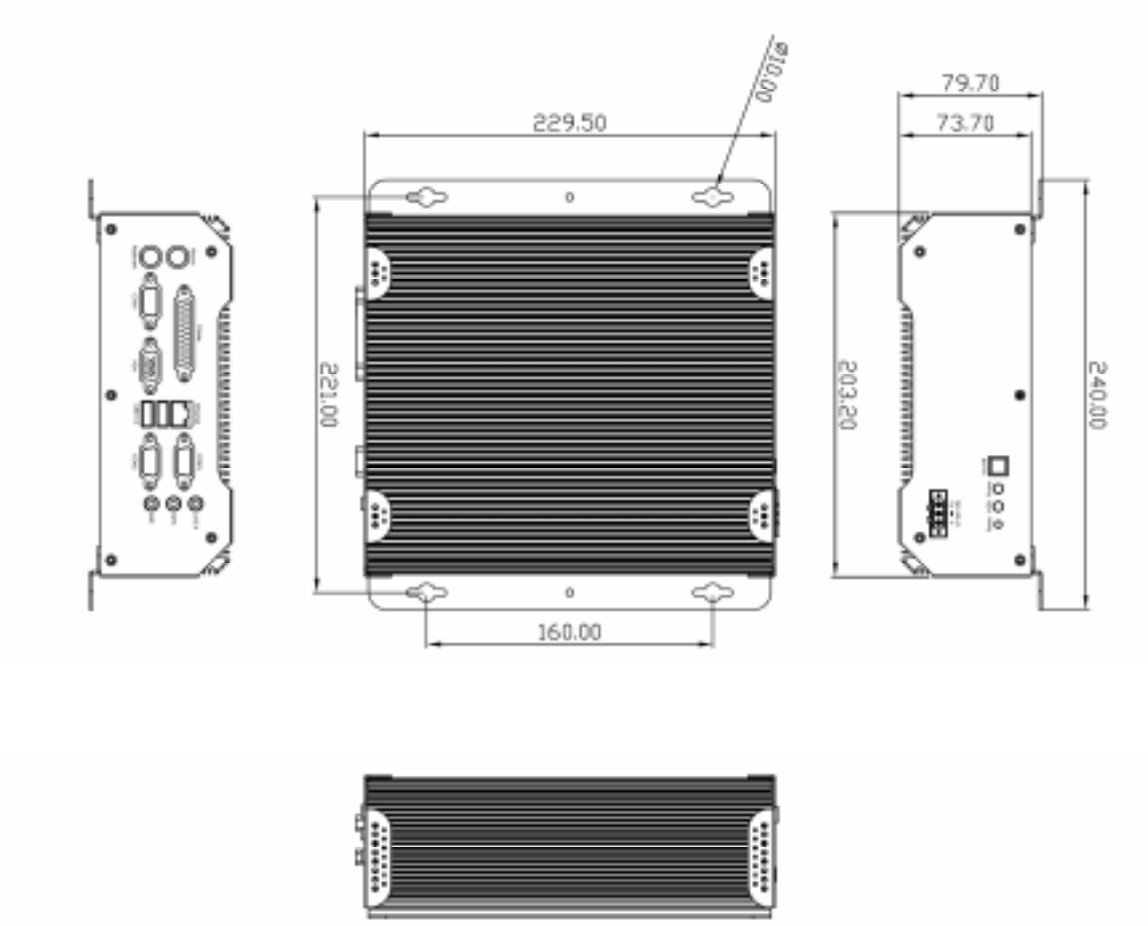

Figure 1.1: Dimensions of the EX-92630

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1.4 Mainboard

Specifications

System

CPU:
Intel® Celeron® M processor

CPU Frequency:
ULV 600MHz (non L2 cache)

Chipset:
Intel® 852GM + ICH4

DRAM:
One 200-pin DDR SO-DIMM supporting DDR266 SDRAM up to 1GB

BIOS:
Phoenix-Award PnP BIOS with VGA BIOS

Watchdog Timer:
1~255 secs watchdog timer selectable w/Reset/NMI

Power Supply:
Support ATX power

Power Requirements:
+5V, +12V, -12V, +5VSB

Dimensions:
170mm x 170mm (6.69 x 6.69 inches)

I/O Ports

IDE Interface:
One 40-pin IDE (UDMA 33/66/100)

CF:
One Compact flash slot (IDE)

FDD Interface:
One FDD

Bus Interface:
PCI slot, mini-PCI bus

Serial Port:
Four COM ports: COM1 and 4 for RS232 and COM2 and for RS232/422/485
(for 16550 compatible type of UART)

Parallel Port:
One parallel (SPP/EPP/ECP)

IrDA:
1 (SIR)

Keyboard:
Mini DIN connector

Mouse:
Mini DIN connector

LAN:
Realtek RTL8100C (10/100Mbps)

Support Wake-on with ATX power

USB:
2 USB 2.0 ports

Graphics:
Built-in Intel® 852GM sharing system memory and supporting CRT, LVDS

Environment

Operating Temperature:
0 ° ~ 60 ° C

Storage Temperature:
-20 ° ~ 80 ° C

Operating Humidity:
20~90%

Storage Humidity:
20~95%

1.5 Safety Precautions

Follow the messages below to avoid your systems from damage:

* Avoid your system from static electricity on all occasions.
* Prevent electric shock. Don‘t touch any components of this card when the card is power-on. Always disconnect power when the system is not in use.
*Disconnect power when you change any hardware devices. For instance, when you connect a jumper or install any cards, a surge of power may damage the electronic components or the whole system.

1.6 Brief Description of the EX-92630

The EX-92630 is a fanless, rugged and ultra-compact standalone Box PC, powered by an Intel Celeron M processor with speed of 600MHz/1.5GHz up to Pentium M 1.7GHz, and supporting 2 USB 2.0 ports. It is ideal for kiosks, POS systems, airport terminal controllers, digital entertainments, etc. and running factory operations from small visual interface and maintenance applications to large control process applications. The EX-92630 works very well along with any of our Display Monitor series. It absolutely can provide an easy way to perform control and field maintenance. It comes with a DC11~28V wide-ranging power input.

Figure 1.2: Front View of EX-92630

Figure 1.3: Rear View of EX-92630

Chapter 2 Hardware Installation

2.1 Removal of HDD Bracket

To remove the HDD bracket from its position, just unscrew the 4 screws as shown in the picture.

2.2 Putting HDD into Bracket

Place the HDD into the base of the bracket as shown in the picture.

2.3 Connecting Cable to HDD

Connect the cable to the HDD, making sure that the red stripe of the cable is on the right side (if connected with the top of the HDD facing upward).

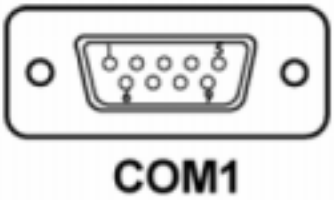
2.4 Installing HDD

Get the 4 screws tightened onto the chassis as shown in the picture.

Chapter 3 Connector and Jumper Setting

COM PORT CONNECTOR

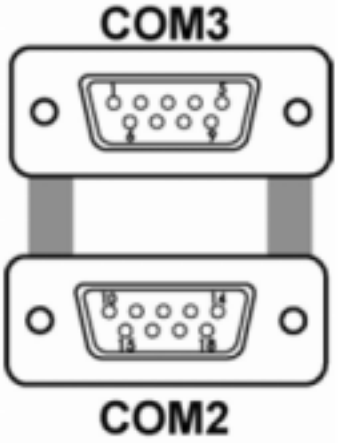
COM1 : COM1 Connector
COM1 is fixed as RS-232.
The pin assignment is as follows :



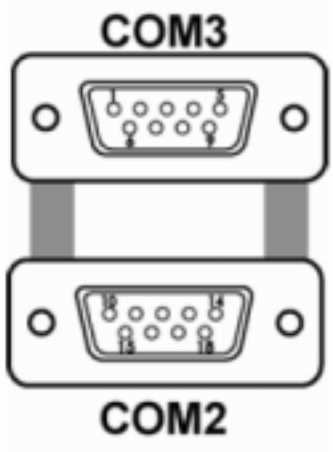
PIN	ASSIGNMENT
1	DCD1
2	RX1
3	TX1
4	DTR1
5	GND
6	DSR1
7	RTS1
8	CTS1
9	RI1

COM2 : COM2 Connector
COM2 is selectable as RS-232/422/485.
The pin assignment is as follows :

PIN	ASSIGNMENT		
	RS-232	RS-422	RS-485
1	DCD2	TX-	TX-
2	RX2	TX+	TX+
3	TX2	RX+	RX+
4	DTR2	RX-	RX-
5	GND	GND	GND
6	DSR2	RTS-	NC
7	RTS2	RTS+	NC
8	CTS2	CTS+	NC
9	RI2	CTS-	NC



COM3 : COM3 Connector
COM3 is selectable as RS-232/422/485.
The pin assignment is as follows :



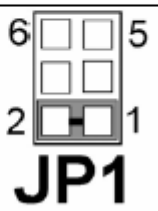
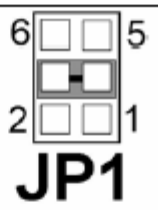
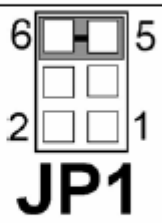
PIN	ASSIGNMENT		
	RS-232	RS-422	RS-485
1	DCD3	TX-	TX-
2	RX3	TX+	TX+
3	TX3	RX+	RX+
4	DTR3	RX-	RX-
5	GND	GND	GND
6	DSR3	RTS-	NC
7	RTS3	RTS+	NC
8	CTS3	CTS+	NC
9	RI3	CTS-	NC

COM4 : COM4 Connector
COM4 is fixed as RS-232.
The pin assignment is as follows:

PIN	ASSIGNMENT
1	DCD4
2	RX4
3	TX4
4	DTR4
5	GND
6	DSR4
7	RTS4
8	CTS4
9	RI4
10	NC

COM4 PIN 9 RI OR VOLTAGE SELECTION

JP1 : COM4 Pin 9 RI or Voltage Selection
The selections are as follows:

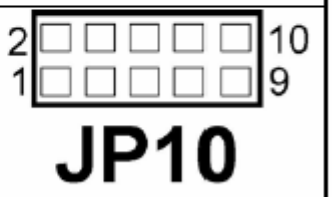
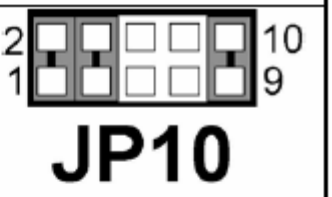
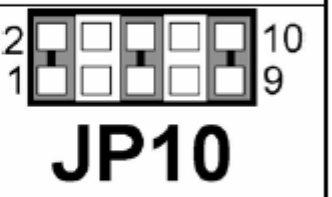
SELECTION	JUMPER SETTINGS	JUMPER ILLUSTRATION
RI	1-2	
+12V	3-4	
+5V	5-6	

***Manufacturing Default – RI.

If COM4's Pin 9 is selectable to voltage mode, only 0.5Amp power consumption is allowed for connected to COM device.

RS232/422/485 (COM2) SELECTION

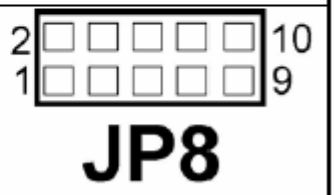
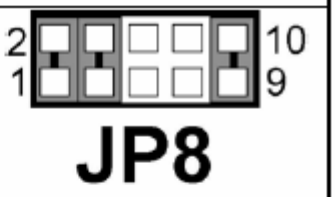
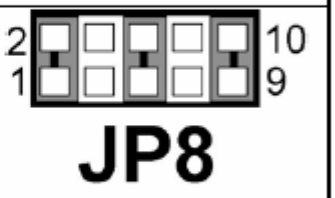
JP10 : RS-232/422/485 (COM2) Selection
This connector is used to set the COM2 function.
The jumper settings are as follows :

COM 2 Function	Jumper Settings (pin closed)	Jumper Illustrations
RS-232	Open	
RS-422	1-2, 3-4, 9-10	
RS-485	1-2, 5-6, 9-10	

*** Manufactory default --- RS-232.

RS232/422/485 (COM3) SELECTION

JP8 : RS-232/422/485 (COM3) Selection
This connector is used to set the COM3 function.
The jumper settings are as follows :

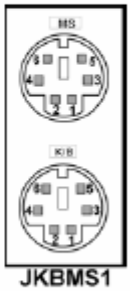
COM 3 Function	Jumper Settings (pin closed)	Jumper Illustrations
RS-232	Open	
RS-422	1-2, 3-4, 9-10	
RS-485	1-2, 5-6, 9-10	

*** Manufactory default --- RS-232.

2-8. KEYBOARD AND PS/2 MOUSE CONNECTOR

JKBMS1 : Keyboard and PS/2 Mouse Connector
DIN connector can support keyboard, and PS/2 Mouse. The pin assignments are as follows :

PIN	ASSIGNMENT	
	Keyboard	PS/2 Mouse
1	KBDATA	MSDATA
2	NC	NC
3	GND	GND
4	5VSB	5VSB
5	KBCLK	MSCLK
6	NC	NC



JKBMS1

2-9. RESET CONNECTOR

JPANEL1 (13,15) : Reset Connector.
The pin assignment is as follows :

PIN	ASSIGNMENT
13	GND
15	RST_SW

JPANEL1

2-10. HARD DISK DRIVE LED CONNECTOR

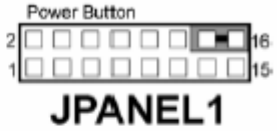
JPANEL1 (9,11) : Hard Disk Drive LED Connector
The pin assignment is as follows :

PIN	ASSIGNMENT
9	HD_LED+
11	HD_LED-

JPANEL1

2-11. POWER BUTTON

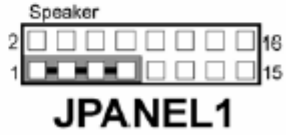
JPANEL1 (14,16) : Power Button
The pin assignment is as follows :



PIN	ASSIGNMENT
14	PWR_BN1
16	PWR_BN2

2-12. EXTERNAL SPEAKER CONNECTOR

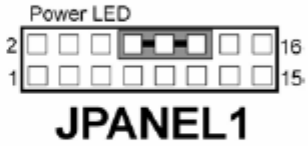
JPANEL1 (1,3,5,7) : External Speaker Connector
The pin assignment is as follows :



PIN	ASSIGNMENT
1	SPK-
3	NC
5	NC
7	SPK+

2-13. POWER LED CONNECTOR

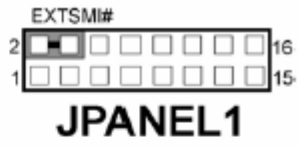
JPANEL1 (8,10,12) : Power LED Connector
The pin assignment is as follows:



PIN	ASSIGNMENT
8	PW_LED+
10	PW_LED+
12	PW_LED-

2-14. EXTERNAL SMI CONNECTOR

JPANEL1 (2,4) : External SMI Connector
The pin assignment is as follows:



JPANEL1

PIN	ASSIGNMENT
2	GPIO12
4	GND

2-15. INVERTER CONNECTOR

INV1 : Inverter Connector
The pin assignment is as follows:

INV1

PIN	ASSIGNMENT
1	+12V
2	GND
3	VCC
4	GND
5	ENABKL (Inverter backlight ON/OFF control signal)

2-16. CLEAR CMOS DATA SELECTION

JP7 : Clear CMOS Data Selection
The selections are as follows :

FUNCTION	JUMPER SETTING (pin closed)	JUMPER ILLUSTRATION
Normal	1-2	 JP7
Clear CMOS	2-3	 JP7

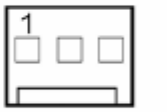
*** Manufacturing Default is set as Normal.

Note: To clear CMOS data, user must power-off the computer and set the jumper to "Clear CMOS" as illustrated above. After five to six seconds, set the jumper back to "Normal" and power-on the computer.

2-17. CPU FAN CONNECTOR

JCFAN1 : CPU Fan connector
The pin assignment is as follows:

PIN	ASSIGNMENT
1	GND
2	+12V
3	FAN1

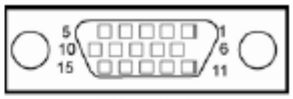


JCFAN1

2-18. VGA CONNECTOR

VGA1 : VGA CRT Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	RED
2	GREEN
3	BLUE
4	NC
5	GND
6	GND
7	GND
8	GND
9	VCC
10	GND
11	NC
12	VGA IIC DATA
13	HSYNC
14	VSYNC
15	VGA IIC CLK



VGA1

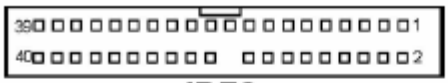
2-19. HARD DISK DRIVE CONNECTOR

IDE1: Hard Disk Drive Connector
The PMB-472 possesses two HDD connectors, IDE1 and IDE2. The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST	2	GND
3	PDD7	4	PDD8
5	PDD6	6	PDD9
7	PDD5	8	PDD10
9	PDD4	10	PDD11
11	PDD3	12	PDD12
13	PDD2	14	PDD13
15	PDD1	16	PDD14
17	PDD0	18	PDD15
19	GND	20	NC
21	PDREQ	22	GND
23	PDIOW#	24	GND
25	PDIOR#	26	GND
27	PIORDY	28	PULL LOW
29	PDDACK#	30	GND
31	IRQ14	32	NC
33	PDA1	34	P66 DETECT
35	PDA0	36	PDA2
37	PDCS#1	38	PDCS#3
39	IDEACTP#	40	GND
41	VCC	42	VCC
43	GND	44	GND

IDE1

IDE2: Hard Disk Drive Connector
The pin assignments are as follows:

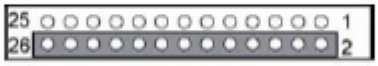


IDE2

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	IDERST	2	GND
3	SDD7	4	SDD8
5	SDD6	6	SDD9
7	SDD5	8	SDD10
9	SDD4	10	SDD11
11	SDD3	12	SDD12
13	SDD2	14	SDD13
15	SDD1	16	SDD14
17	SDD0	18	SDD15
19	GND	20	NC
21	SDREQ	22	GND
23	SDIOW#	24	GND
25	SDIOR#	26	GND
27	SIORDY	28	PULL LOW
29	SDDACK#	30	GND
31	IRQ15	32	NC
33	SDA1	34	S66 DETECT
35	SDA0	36	SDA2
37	SDCS#1	38	SDCS#3
39	IDEACTS#	40	GND

2-20. FLOPPY DISK DRIVE CONNECTOR

FDD1 : Floppy Disk Drive Connector
The pin assignments are as follows :

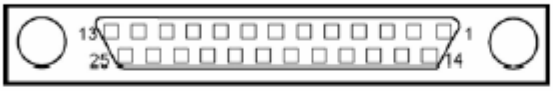


FDD1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	VCC	2	INDEXJ
3	VCC	4	DSAJ
5	VCC	6	DSKCHGJ
7	NC	8	NC
9	NC	10	MOAJ
11	NC	12	DIRJ
13	DRVDEN0	14	STEPJ
15	GND	16	WDATAJ
17	GND	18	WGATEJ
19	GND	20	TRACK0J
21	GND	22	WPTJ
23	GND	24	RDATAJ
25	GND	26	HEADJ

2-21. PRINTER CONNECTOR

JPRNT1 : Printer Connector
As to link the Printer to the card, you need a cable to connect both DB25 connector and parallel port.
The pin assignments are as follows :



JPRNT1

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	STB	14	AFD#
2	PDR0	15	ERROR#
3	PDR1	16	PAR_INIT#
4	PDR2	17	SLIN#
5	PDR3	18	GND
6	PDR4	19	GND
7	PDR5	20	GND
8	PDR6	21	GND
9	PDR7	22	GND
10	ACK#	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT		

2-22. UNIVERSAL SERIAL BUS CONNECTOR

JUSB1: Universal Serial Bus Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	VCCUSB2
2	VCCUSB2
3	USB2N_R
4	USB3N_R
5	USB2P_R
6	USB3P_R
7	GND
8	GND
9	GND
10	GND

JUSB2: Universal Serial Bus Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	VCCUSB3
2	VCCUSB3
3	USB4N_R
4	USB5N_R
5	USB4P_R
6	USB5P_R
7	GND
8	GND
9	GND
10	GND

2-23. IRDA CONNECTOR

IRDA1: IrDA (Infrared) Connector
The pin assignments are as follows:

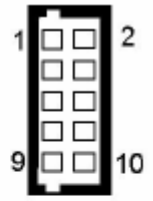
PIN	ASSIGNMENT
1	+5V
2	NC
3	IRRX
4	GND
5	IRTX

IRDA1

2-24. LAN CONNECTOR

LAN2: LAN Connector
The pin assignments are as follows:

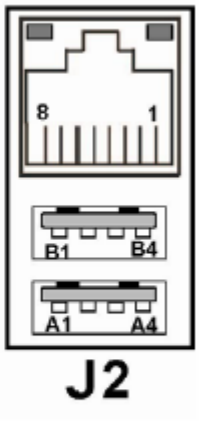
PIN	ASSIGNMENT
1	LAN2_TXP_R
2	2VDD33
3	LAN2_TXN_R
4	LAN2_ACT_R
5	GND
6	LAN2_LINK100_R
7	LAN2_RXP_R
8	LAN2_LINK10_R
9	LAN2_RXN_R
10	NC



LAN2

2-25. USB&LAN CONNECTOR

J2: USB & LAN Connector (10/100 LAN)
The pin assignments are as follows:



LAN:

PIN	ASSIGNMENT
1	MDI_0P
2	MDI_0N
3	MDI_1P
4	MDI_1N
5	MDI_2P
6	MDI_2N
7	MDI_3P
8	MDI_3N

LAN LED Indicator:
Left side LED:

Green Color on	10/100 LAN Speed Indicator
Orange Color on	Giga LAN Speed Indicator
off	No LAN switch/hub connected

Right side LED:

Yellow Color Blinking	LAN Message Active
off	No LAN Message Active

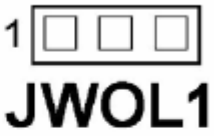
USB:

PIN	ASSIGNMENT
A1	VCCUSB1
A2	USB1N_R
A3	USB1P_R
A4	GND
B1	VCCUSB0
B2	USB0N_R
B3	USB0P_R
B4	GND

2-26. WAKE-ON-LAN CONNECTOR

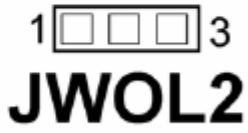
JWOL1: Wake-On-LAN Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	5VSB
2	GND
3	LWAKE



JWOL2: Wake-On-LAN Connector
The pin assignments are as follows:

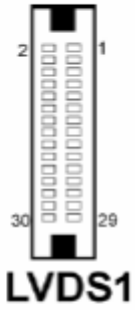
PIN	ASSIGNMENT
1	5VSB
2	GND
3	PMEJ



2-27. LVDS CONNECTOR

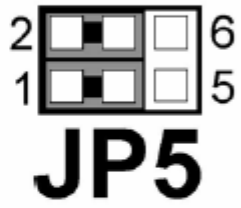
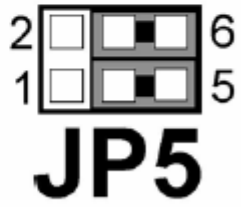
LVDS1 : LVDS Connector.
The pin assignments are as follows:

PIN	ASSIGNMENT	PIN	ASSIGNMENT
1	LCD_VCC	2	GND
3	ZCM	4	ZCP
5	GND	6	Z2M
7	Z2P	8	GND
9	Z1M	10	Z1P
11	Z3P	12	Z3M
13	Z0P	14	Z0M
15	GND	16	YCP
17	YCM	18	GND
19	Y2P	20	Y2M
21	GND	22	Y1P
23	Y1M	24	GND
25	Y0P	26	Y0M
27	Y3P	28	Y3M
29	LCD_VCC	30	LCD_VCC



2-28. LVDS PANEL VOLTAGE SELECTION

JP5 : LVDS Panel Voltage Selection.
The selections are as follows:

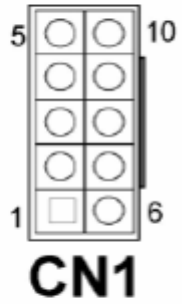
SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
LVDS_VCC3	1-3 2-4	
LVDS_VCC5	3-5 4-6	

** Manufacturing Default: LVDS_VCC3**

2-29. ATX POWER CONNECTOR

CN1 : ATX Power Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	VCC
2	VCC
3	GND
4	GND
5	+12V
6	5VSB
7	VCC
8	GND
9	PS-ON
10	-12V



2-30. SOUND CONNECTOR

JAUDIO1 : Sound Connector, including Line-In, Line-Out & Mic. Also can support only MIC connector. The pin assignments are as follows :

SPDIF (inside the Line-In hole)

PIN	ASSIGNMENT
#	Photo type

Line-In: light blue color

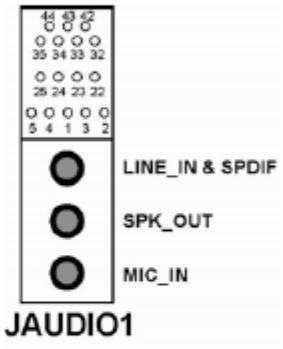
PIN	ASSIGNMENT
1	GND
2	LINE_L
3	LINE_R

SPK-Out: light green color

PIN	ASSIGNMENT
1	GND
2	SPK_L
3	SPK_R

Mic-In: pink color

PIN	ASSIGNMENT
1	GND
2	MIC_IN1
3	MIC_IN2



JAUDIO1

2-31. CD AUDIO-IN CONNECTOR

JCDIN2 : CD Audio-In Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	CD L
2	CDGND
3	CDGND
4	CD R

2-32. SPEAKER CONNECTOR

SPK1 : Speaker Connector
The pin assignments are as follows:

PIN	ASSIGNMENT
1	SPK_L
2	GND
3	SPK_R

2-33. MEMORY INSTALLATION

PMB-472 CPU Card can support up to 1GB in one SODIMM sockets.
DRAM BANK CONFIGURATION

SO-DIMM	TOTAL MEMORY
128MB	128MB
256MB	256MB
512MB	512MB
1GB	1GB

2-34. PCI SLOT PIN 26 SELECTION

JP6 : PCI/Riser Card Selection.
The selections are as follows:

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
PCI (IDSEL)	1-2	 JP6
Riser Card (P_GNT#5)	2-3	 JP6

** Manufacturing Default: Riser Card**

2-35. RESET/ NMI SELECTION

JP9 : Reset/NMI Selection.
The selections are as follows:

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
Reset	1-2	 JP9
NMI	3-4	 JP9

** Manufacturing Default: Reset**

2-36. CF MASTER/ SLAVE SELECTION

JP3 : CF Master/ Slave Selection.

The selections are as follows:

SELECTION	JUMPER SETTING	JUMPER ILLUSTRATION
Master	1-2	
Slave	Open	

** Manufacturing Default: Master**

2-37. PCI SLOT SIGNAL EXPLANATION

In order to support standard PCI and PCI riser board for up to 3 PCI devices, the PCI slot signals in this mainboard are listed below:

PIN	Standard	Riser
A1	TRST#	SERIRQ
A9	RSVD	CLKC
A11	RSVD	CLKD
A14	RSV->3VSB	GNT1#
A19	PME#	REQ2#
A26	IDSEL	GNT2#
A40	SMBCLK	REQA#
A41	SMBDATA	GNTA#
B2	TCK	ISA_CLK
B9	PRSNT1#	REQ3#
B10	RSVD	REQ1#
B11	PRSNT2#	GNT3#
B14	RSVD	CLKA
B16	CLK	CLKB

2-38. PCI RISER BOARD INFORMATION

For correctly operation for 3 PCI devices on the PCI slot of PMB-472, the particular PCI riser card must be followed to the following recommendation. Professional technical consultant may need for designing the right riser board or purchasing from the same manufactories' riser board.

PCI Routing Table

IDSEL	INTJ0	INTJ1	INTJ2	INTJ3	REQ#	GNT#	CLK
AD28	A	B	C	D	P_REQJ3	P_GNTJ3	PCI_CLK3
AD29	B	C	D	A	P_REQJ4	P_GNTJ4	PCI_CLK4
AD30	C	D	A	B	P_REQJ5	P_GNTJ5	PCI_CLK5

2-39. DIGITAL I/O PORT

DIO1 : Digital Input/Output Port
The pin assignments are as follows:

PIN	ASSIGNMENT
1	VCC
2	GND
3	Input bit 0
4	Output bit 0
5	Input bit 1
6	Output bit 1
7	Input bit 2
8	Output bit 2
9	Input bit 3
10	Output bit 3

Input Port: Read I/O 440H
Output Port: Write I/O 441H