

# **PL-80460**

## **Networking Appliance**

**2U Rack-mount Intel® 32nm Sandy Bridge Intel® i3/i5/i 7 and E3 xx with LGA1155 processors, Network Appliance with 4 x GbE, SATA, CF, bypass function**

### **User's Manual**

**Version 1.0**

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## Chapter1. General Information

### 1.1 Introduction

The PL-80460 is a 2U rack-mounted hardware platform designed for network service applications. Built with Intel® Embedded IA components with warranty of longevity, the PL-80460 supports a single Intel® 32nm Sandy Bridge i3/i5/i7 and E3 xx processor and LGA1155. The platform supports four unbuffered and non- ECC DDR3 1066/1333MHz DIMM sockets with memory up to 32 GB. In order to provide the best network performance and best system utilization, powerful storage interfaces include two 3.5" SATA HDD and one CompactFlash™. The PL-80460 also supports one PCI expansion slot.

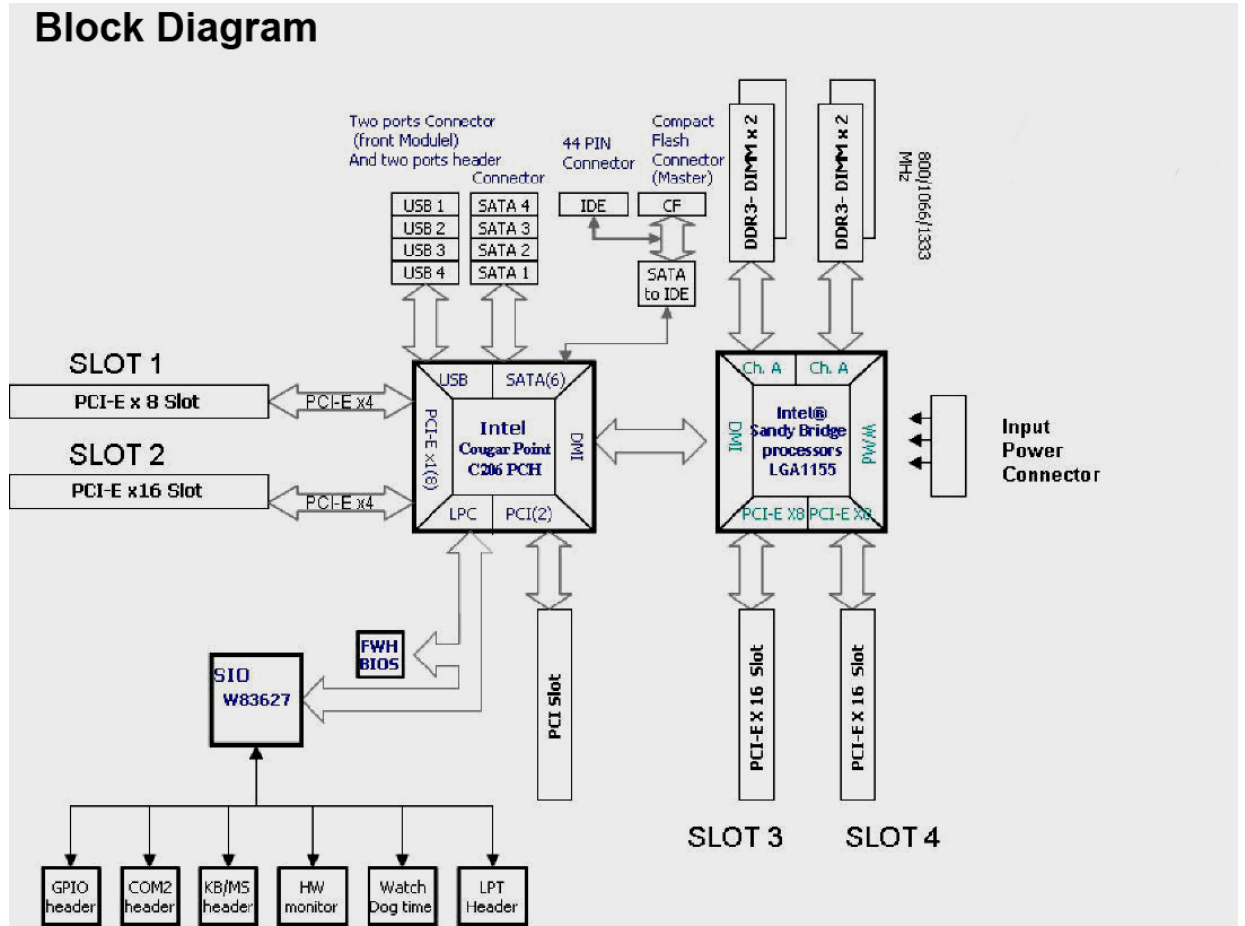
This platform affords 4 GbE and max 28 GbE Ethernet ports on the front panel. The front panel also has one USB 2.0 port, one RJ-45 console port and LED indicators that monitor power and storage device activities for local system management, maintenance and diagnostics. In addition, the PL-80460 is RoHS, FCC and CE compliant.

### 1.2 Specifications

Processor System	CPU	Support Single Intel® 32nm Sandy Bridge i3/i5/i7 and E3xx processors, LGA1155
	Chipset	Cougar Point C206 PCH
	BIOS	AMI 8Mbit U EFI flash
Memory	Technology	ECC/non- ECC, un-buffered 2-Channels DDR3 1066/1333 MHz memory
	Capacity	Up to 32GB with 4 DIMM sockets
Expansion	Expansion Slots	Onboard one PCI-E x 8 slot (180°), SLOT1 Onboard tree PCI-E x 16 slot (180°), SLOT2, SLOT3, SLOT4 Onboard one PCI SLOT **Onboard one PCI-E x 4 SLOT (only supports E3xx processors (optional))
Ethernet	GbE Ethernet	Module R176 supports four GbE, Intel 82574L PCI- E x1, with two pairs bypass function (optional)
Storage	HDD	two internal 3.5" SATA HDD bay
	Compact Flash Socket	One Compact Flash™ Type I/II One 44pin ID E connector

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<b>I/O</b>	<b>USB</b>	<b>One External USB2.0 Internal: 2 x USB Pin-header</b>
	<b>Serial</b>	<b>One RJ45 Console port (COM1) One internal header for second console (COM2)</b>
<b>Power Supply</b>	<b>Watt</b>	<b>ATX power supply</b>
<b>Mechanical and Environmental</b>	<b>Form Factor</b>	<b>2U rackmount</b>
	<b>LCD Module</b>	<b>Optional</b>
	<b>Keypad</b>	<b>Optional</b>
	<b>LED</b>	<b>Front panel: tree LED with module R176 One Power LED (Green) One HDD LED (Yellow) One bypass L ED*( Green)</b>
	<b>Dimensions (W x D x H)</b>	<b>435mm (W) x 500mm (D) x 88mm (H) (17.1" W x 19.6" D x 3.4" H)</b>
	<b>Operating Temperature</b>	<b>Operating: 0 - 40°C ( 32 - 104°F )</b>
	<b>Humidity</b>	<b>10 - 85% relative humidity, non-operating, non-condensing</b>
<b>Weight</b>	<b>1pc/CTN, 10kgs, 77.4cm(W) x 64.2cm(D) x 33.6cm(H)</b>	
<b>Certification</b>	<b>CE/FCC</b>	



### 1.3 Ordering Information

<b>PL-8046A</b>	<b>2U Rack-Mount, Support LGA1155 Support Single Intel® 32nm Sandy Bridge i3/i5/i7 and E3 xx processors, 4 x RJ45 GbE ports,</b>
<b>PL-8046B</b>	<b>2U Rack-Mount, Support LGA1155 Support Single Intel® 32nm Sandy Bridge i3/i5/i7 and E3 xx processors, 4 x RJ45 GbE ports, 2 pairs bypass</b>
<b>DK001</b>	<b>Cable development kit</b>

Note: Accessories are available for PL-80460

## 1.4 Packaging

Please make sure that the following items have been included in the package before installation.

1. PL-80460 Appliance
2. Quick Installation Guide (Optional)
3. Cables (Optional)
4. CD-ROM that contains the following folders:
  - (1) Manual
  - (2) System Driver
  - (3) Ethernet Driver
  - (4) Utility Tools

If any item of above items are missing or damaged contact your dealer or retailer from whom you purchased the PL-80460. Retain the box and carton for near-term shipment or storage. After you unpack the goods, inspect and make sure the packaging is intact. Do not plug the power adapter to the appliance of PL-80460 if you find it appears damaged.

*Note: Keep the PL-80460 in the original packaging until you begin your installation.*

## 1.5 Precautions

Ground yourself before handling the PL-80460 appliance or its system components. Electrostatic discharge can be easily damage the appliance.

Do not remove the anti-static packing until you are ready to install the PL-80460 appliance.

Ground yourself before removing any system component from it protective anti-static packaging. To ground yourself, grasp the expansion slot covers or other unpainted parts of the computer chassis.

Handle the PL-80460 appliance by its edges and avoid touching the components on it.

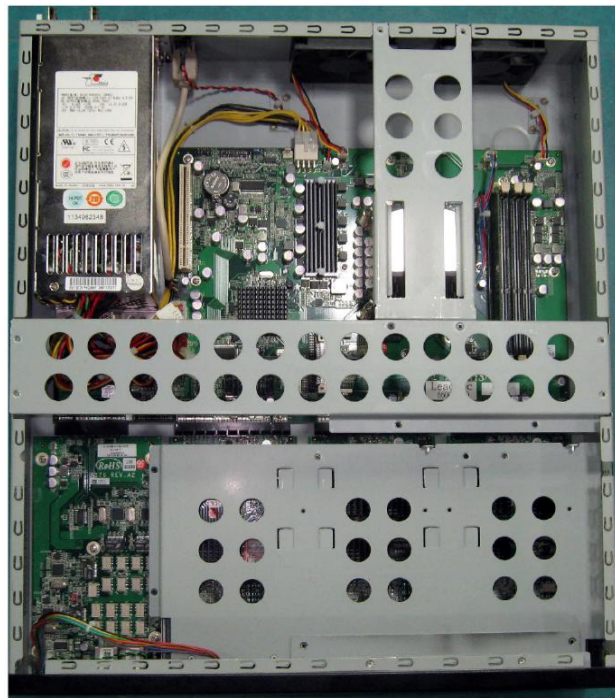


## 1.6 System Layout

PL-80460 Front Side

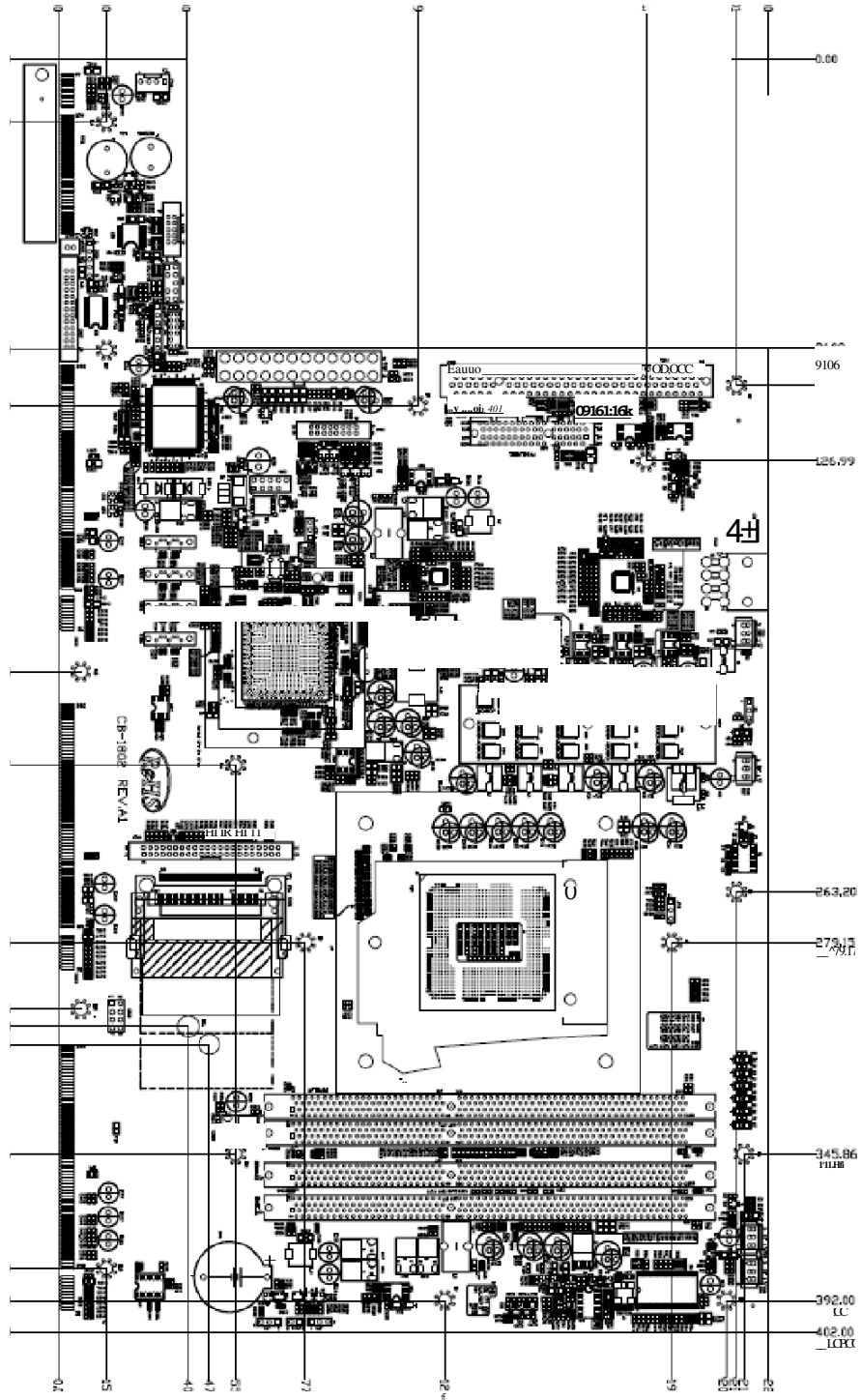


PL-80460 Back Side



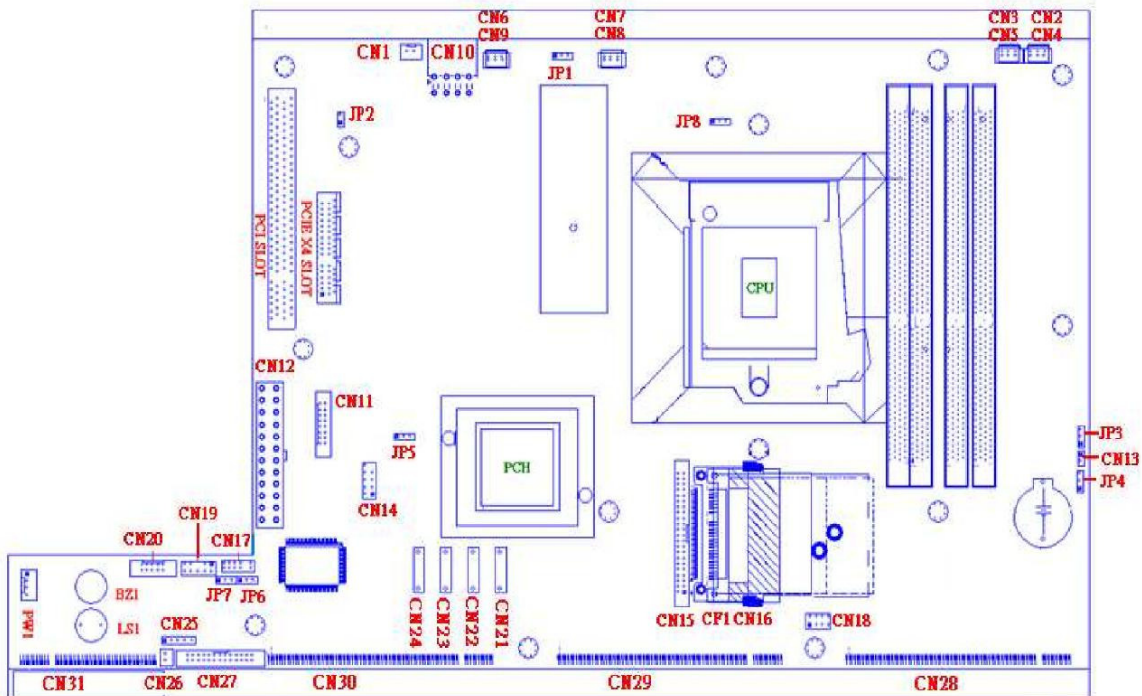
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## 1.7 Board Dimensions



## Chapter2. Connector/Jumper Configuration

### 2.1 Connector/Jumper Location and Definition



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### Connector Location and Definition

NO.	Description	NO.	Description
CN1	Power ON	CN17	Port 80
CN2	FAN Connector	CN18	SPI FLASH download Header
CN3	FAN Connector	CN19	PS2 KB/ MS Pin Header
CN4	FAN Connector	CN20	COM2 Box Header
CN5	FAN Connector	CN21	SATA CONNECTOR
CN6	FAN Connector	CN22	SATA CONNECTOR
CN7	FAN Connector	CN23	SATA CONNECTOR
CN8	FAN Connector	CN24	SATA CONNECTOR
CN9	FAN Connector	CN25	LCM BACKLIGHT
CN10	12V POWER CONNECTOR ( 8 PIN)	CN26	GPI
CN11	VGA Box Header	CN27	LCM Box Header
CN12	ATX Power Connector ( 24 PIN)	CN28	PCI- E x16 Connector (Signal use PCI E X8)
CN13	System Reset Pin Header	CN29	PCI- E x16 Connector (Signal use PCI E X8)
CN14	USB Pin Header	CN30	PCI- E x16 Connector (Signal use PCI E X4)
CN15	ID E 44 Pin BOX Header	CN31	PCI- E x8 Connector (Signal use PCI E X1)
CN16	Cfast Connector(optional)	CF1	CF Connector


### Connector/Jumper Location and Definition

NO.	Description
JP1	PEG PORT CONFIG SELECT ( JP1 1-2 FOR PCI E X8 , JP1 2-3 FOR PCI E 1X8 + 2X4)
JP2	V_SA VOLTAGE S ELCT , (OPEN = 0.925V , CLOSE = 0.85V)
JP3	RESET Et GPI SELECT (1-2 FOR GPI ; 2-3 FOR RESET)
JP4	WATCH DOG Et BY-PASS: (1-2 FOR BY-PASS ; 2-3 FOR WATCH DOG)
JP5	CLEAR CMOS: (1-2 FOR NORMAL ; 2-3 FOR CLEAR CMOS)
JP6	AT Et ATX MODE SELECT: (1-2 FOR ATX MODE ;2-3 FOR AT MODE)
JP7	ATX Et AT Power SELECT: (1-2 FOR ATX ; 2-3 FOR AT)

## 2.2 Connector and Jumper Setting


### CN1: ATX Power On Switch

PIN	Description
1	GND
2	PANSWIN#

### CN2(CN4)/CN3(CN5)/CN6(CN9)/CN8(CN7): FAN Connector

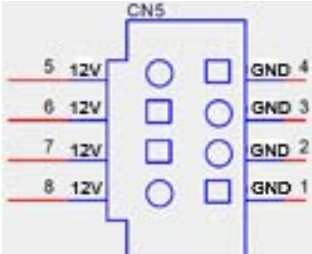
PIN	Description
1	GND
2	+12V
3	SENSE

FAN CONN-1\*3 WAFER

### CN10: 12V POWER CONNECTOR ( 8 PIN )

PIN	Description
1	GND
2	GND
3	GND
4	GND
5	+12V
6	+12V
7	+12V
8	+12V

ATX CONN 2X4\_4.2mm\_D90/DIP

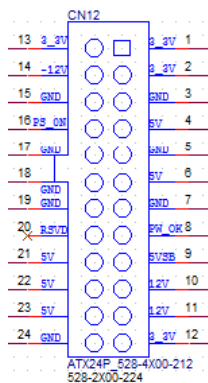
## CN11:VGA Box Header

PIN	Description	PIN	Description
1	R	2	G
3	B	4	1K Pull +5V
5	GND	6	GND
7	GND	8	GND
9	+5V	10	GND
11	1K Pull +5V	12	SPD2
13	HSYNC	14	VS YNC
15	SPCLK2	16	NC



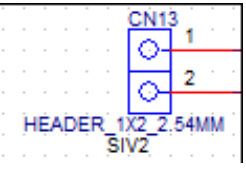
## CN12:ATX Power Connector ( 24 PIN )

PIN	Description	PIN	Description
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS-ON#
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	PWROK	20	RSVD
9	5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	GND



## CN13: System Reset Pin Header

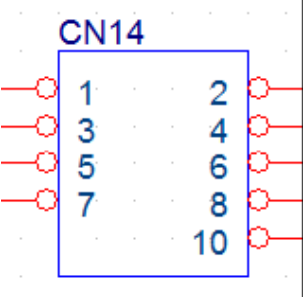
PIN	Description
1	FP_RESET_SW/GP106
2	GND



The diagram shows a 2-pin header labeled CN13. Pin 1 is connected to FP\_RESET\_SW/GP106 and pin 2 is connected to GND. The header is labeled 'HEADER 1X2 2.54MM SIV2'.

## CN14: USB Pin Header

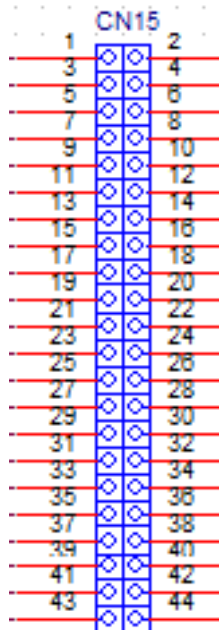
PIN	Description	PIN	Description
1	+5V	2	+5V
3	USB_PN_O	4	USB_PN_1
5	USB_PN_O	6	USB_PP_1
7	GND	8	GND
	NONE	10	GND



The diagram shows a 10-pin header labeled CN14. The pins are numbered 1 through 10. Pins 1, 3, 5, and 7 are on the left side, and pins 2, 4, 6, 8, and 10 are on the right side. Pin 10 is the only pin on the right side that is not connected to a signal.

## CN15: ID E 44 Pin BOX Header

PIN	Description	PIN	Description
1	ID E_RST_N	2	PRST
3	PDD7	4	PDD8
5	PDD6	6	PDD9
7	PDD6	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	PDDR EQ	22	GND
23	PDIOW#	24	GND
25	PDIOR#	26	GND
27	ID E_IORDY	28	PRI_PD1
29	ID E_DACK_N	30	GND
31	ID E_IRQ_	32	NC
33	PDA1	34	ID E_CALID#
35	PDAO	36	PDA2
37	PCS1#	38	PCS3#
39	ID E_LED_N	40	GND
41	+5V	42	+5V
43	GND	44	NC



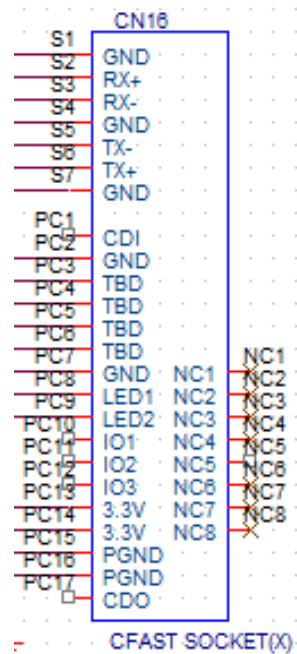
BOX Header 2x22(2.0mm)/DP



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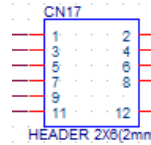
### CN16: CFAST Connector (Optional)

PIN	Description	PIN	Description
S1	GND	PCI10	NC
S2	CFAST_SATA_TXP_C	PCI11	NC
S3	CFAST_SATA_TXN_C	PCI12	NC
S4	GND	PCI13	V3P3
S5	CFAST_SATA_RXN_C	PCI14	V3P3
S6	CFAST_SATA_RXP_C	PCI15	GND
S7	GND	PCI16	GND
PCI1	NC	PCI17	NC
PCI2	GND	NC1	NC
PCI3	CFAST_PIN10	NC2	NC
PCI4	CFAST_PIN11	NC3	NC
PCI5	CFAST_UAO	NC4	NC
PCI6	CFAST_UAI	NC5	NC
PCI17	GND	NC6	NC
PCI18	TP_CFAST_LED1	NC7	NC
PCI19	TP_CFAST_LED2	NC8	NC



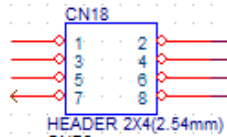
## CN17: Port 80

PIN	Description	PIN	Description
1	+3.3V	2	LAD0
3	LAD1	4	LAD2
5	LAD3	6	LFRAME#
7	RST_CHIP#	8	+5V
9	CLK_33M_PORT80	10	NC
11	GND	11	GND



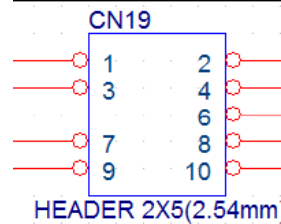
## CN18: SPI FLASH downloads Header

PIN	Description	PIN	Description
1	+3.3V	2	GND
3	SPI_PCH_CS0_N	4	SPI_PCH_CLK0
5	SPI_PCH_MISO_R	6	SPI_PCH_MOSI_R
7	NC	8	FLASH_IO



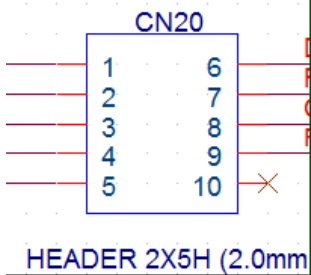
## CN19: PS2 KB/MS Header

PIN	Description	PIN	Description
1	Keyboard CLK	2	Mouse CLK
3	Keyboard Data	4	Mouse Data
5	Key Pin	6	NC
7	GND	8	GND
9	+5V	10	+5V



## CN20: COM2 Box Header

PIN	Description	PIN	Description
1	DCD#2	6	DSR#2
2	RXD#2	7	RTS#2
3	TXD#2	8	CTS#2
4	DTR#2	9	RI#2
5	GND	10	NC

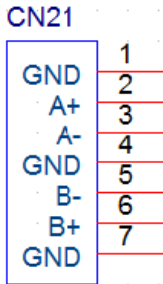


CN20

HEADER 2X5H (2.0mm)

## CN21/CN22/CN23/CN24: SATA 1/2/3/4 CONNECTOR

PIN	Description
1	GND
2	SATA_TXP
3	SATA_TXN
4	GND
5	SATA_RXN
6	SATA_RXP
7	GND

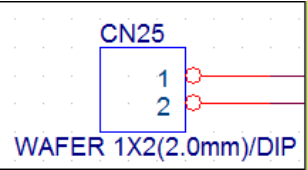


CN21

SATA CONN

## CN25: LCM BACKLIGHT

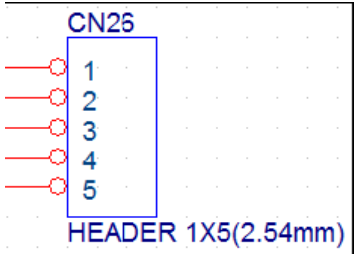
PIN	Description
1	LCM_EN
2	+5V



The diagram shows a 2-pin wafer header labeled CN25. The header is a 1x2 grid with a 2.0mm pitch. The two pins are labeled 1 and 2. Red lines indicate connections from the pins to the LCM\_EN and +5V labels in the table above. The text 'WAFER 1X2(2.0mm)/DIP' is written below the header.

## CN26: GPI

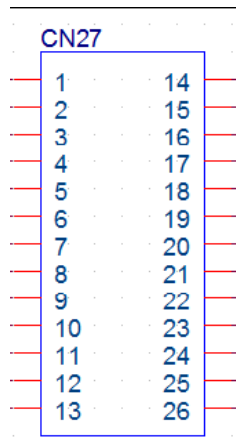
PIN	Description
1	GPIO30
2	GPIO31
3	GPIO32
4	GPIO33
5	GND



The diagram shows a 5-pin header labeled CN26. The header is a 1x5 grid with a 2.54mm pitch. The five pins are labeled 1 through 5. Red lines indicate connections from the pins to the GPIO30, GPIO31, GPIO32, GPIO33, and GND labels in the table above. The text 'HEADER 1X5(2.54mm)' is written below the header.

## CN27: LCM Box Header

PIN	Description	PIN	Description
1	P-STB#	14	AFD#
2	P-PDRO	15	ERR#
3	P-PDR1	16	PAR_INIT#
4	P-PDR2	17	SLIN#
5	P-PDR3	18	GND
6	P-PDR4	19	GND
7	P-PDR5	20	GND
8	P-PDR6	21	GND
9	P-PDR7	22	GND
10	ACK#	23	GND
11	BUSY	24	GND
12	P E	25	GND
13	SLCT	26	GND

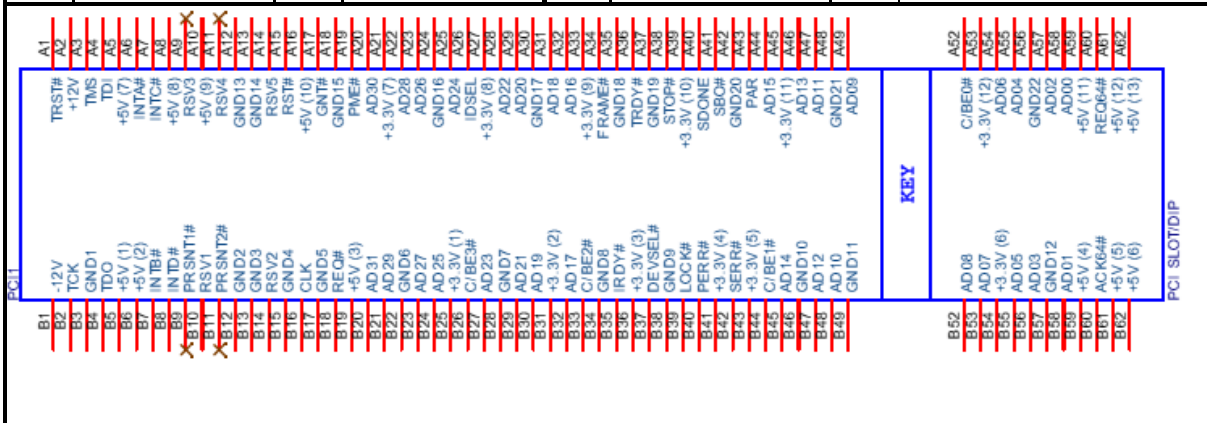


BOX HEADER 2X13(2.0mm)/DIP

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## PCI 1 : PCI Connector

PIN	Description	PIN	Description	PIN	Description	PIN	Description
B1	-12v	A1	PCI_TRST#	B32	AD17	A32	AD16
B2	PCI_TCK	A2	+12V	B33	PCI_CBE_N2	A33	+3.3V
B3	GND	A3	PCI_TMS	B34	GND	A34	PCI FRAME N
B4	PCI_TDO	A4	PCI_TDI	B35	PCI_IRDY_N	A35	GND
B5	+5V	A5	+5V	B36	+3.3v	A36	PCI_TRDY_N
B6	+5V	A6	PCI_PIRQA_N	B37	PCI_DEVSEL_N	A37	GND
B7	PCI_PIRQB_N	A7	PCI_PIRQC_N	B38	GND	A38	PCI STOP N
B8	PCI_PIRQD_N	A8	+5V	B39	PCI_LOCK_N	A39	+3.3V
B9	NC	A9	NC	B40	PCI_PERR_N	A40	SMB_HOST_3V3_CLK
B10	PCI_REQ_N1	A10	+5V	B41	+3.3V	A41	SMB_HOST_3V3_DAT
B11	NC	A11	NC	B42	PCI_SERR_N	A42	GND
B12	GND	A12	GND	B43	+3.3V	A43	PCI PAR
B13	GND	A13	GND	B44	PCI_CBE_N1	A44	AD15
B14	PCI_SLOT1	A14	PCI_GNT_N1	B45	AD14	A45	+3.3V
B15	GND	A15	PCI_RST_N	B46	GND	A46	AD13
B16	PCI_SLOT0	A16	+5V	B47	AD12	A47	AD11
B17	GND	A17	PCI_GNT_N0	B48	AD10	A48	GND
B18	PCI_REQ_N0	A18	GND	B49	GND	A49	AD9
B19	+5v	A19	PCI_PME_N	B50	KEY	A50	KEY
B20	AD31	A20	AD30	B51	KEY	A51	KEY
B21	AD29	A21	+3.3V	B52	AD8	A52	PCI_CBE_N0
B22	GND	A22	AD28	B53	AD7	A53	+3.3V
B23	AD27	A23	AD26	B54	+3.3V	A54	AD6
B24	AD25	A24	GND	B55	AD5	A55	AD4



### CN28: PCI- E x16 Connector (Signal use PCI E X8)

PIN	Define	Description	PIN	Define	Description
B1	GND	GND	A1	GND	GND
B2	PCI E_S EL1	Low level ( GND )	A2	LPC_LAD0	LPC Multiplexed Command, Address, Data
B3	PCI E_S EL2	High level ( 3.3VSB )	A3	LPC_LAD1	LPC Multiplexed Command, Address, Data
B4	PCI E_S EL2	Low level ( GND )	A4	LPC_LAD2	LPC Multiplexed Command, Address, Data
B5	GND	GND	A5	LPC_LAD3	LPC Multiplexed Command, Address, Data
B6	GND	GND	A6	LPC_FRAM E#	LPC Frame
B7	GND	GND	A7	GND	GND
B8	SUSCLK	32KHz Clock output	A8	CLK	33MHz Clock output
B9	DUAL_3V	3.3VSB	A9	GND	GND
B10	DUAL_3V	3.3VSB	A10	R ES ET#	Platform Reset
B11	DUAL_3V	3.3VSB	A11	GND	GND
B12	VCC5	5V	A12	VCC5	5V
B13	VCC5	5V	A13	VCC5	5V
B14	VCC5	5V	A14	VCC5	5V
B15	VCC5	5V	A15	VCC5	5V
B16	VCC5	5V	A16	VCC5	5V
B17	VCC3	3.3V	A17	VCC3	3.3V
B18	VCC3	3.3V	A18	VCC3	3.3V
B19	VCC3	3.3V	A19	VCC3	3.3V
B20	VCC3	3.3V	A20	VCC3	3.3V
B21	VCC3	3.3V	A21	VCC3	3.3V
B22	VCC3	3.3V	A22	VCC3	3.3V
B23	VCC3	3.3V	A23	VCC3	3.3V
B24	+12V	12V	A24	+12V	12V
B25	+12V	12V	A25	+12V	12V

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<b>B26</b>	<b>+12V</b>	<b>12V</b>	<b>A26</b>	<b>+12V</b>	<b>12V</b>
<b>B27</b>	<b>+12V</b>	<b>12V</b>	<b>A27</b>	<b>+12V</b>	<b>12V</b>
<b>B28</b>	<b>+12V</b>	<b>12V</b>	<b>A28</b>	<b>+12V</b>	<b>12V</b>
<b>B29</b>	<b>SMB_AL ERT#</b>	<b>SMBus AL ERT#</b>	<b>A29</b>	<b>ATX_PWROK_B1</b>	<b>Power good signal from ATX power supply</b>
<b>B30</b>	<b>P E_WAK E#</b>	<b>PCI Express Device Wake Event signal</b>	<b>A30</b>	<b>GPIO17</b>	<b>Status LED (Output)</b>
<b>B31</b>	<b>ATX_PWROK_A1</b>	<b>Power good signal from ATX power supply</b>	<b>A31</b>	<b>GND</b>	<b>GND</b>
<b>B32</b>	<b>BYPASS#</b>	<b>WatchDog By Pass signal</b>	<b>A32</b>	<b>SMB_CLK</b>	<b>SMBus Clock</b>
<b>B33</b>	<b>GND</b>	<b>GND</b>	<b>A33</b>	<b>SMB_DAT</b>	<b>SMBus Data</b>
<b>B34</b>	<b>USB_P</b>	<b>USB Port signal</b>	<b>A34</b>	<b>GND</b>	<b>GND</b>
<b>B35</b>	<b>USB_N</b>	<b>USB Port signal</b>	<b>A35</b>	<b>FANIN</b>	<b>Amplitude fan tachometer input</b>
<b>B36</b>	<b>USB_OC#</b>	<b>USB device Over current Indicators</b>	<b>A36</b>	<b>GND</b>	<b>GND</b>
<b>B37</b>	<b>GND</b>	<b>GND</b>	<b>A37</b>	<b>GND</b>	<b>GND</b>
<b>B38</b>	<b>GND</b>	<b>GND</b>	<b>A38</b>	<b>GND</b>	<b>GND</b>
<b>B39</b>	<b>GND</b>	<b>GND</b>	<b>A39</b>	<b>GND</b>	<b>GND</b>
<b>B40</b>	<b>GND</b>	<b>GND</b>	<b>A40</b>	<b>GND</b>	<b>GND</b>
<b>B41</b>	<b>GND</b>	<b>GND</b>	<b>A41</b>	<b>GND</b>	<b>GND</b>
<b>B42</b>	<b>GND</b>	<b>GND</b>	<b>A42</b>	<b>GND</b>	<b>GND</b>
<b>B43</b>	<b>GND</b>	<b>GND</b>	<b>A42</b>	<b>GND</b>	<b>GND</b>
<b>B44</b>	<b>GND</b>	<b>GND</b>	<b>A44</b>	<b>GND</b>	<b>GND</b>
<b>B45</b>	<b>GND</b>	<b>GND</b>	<b>A45</b>	<b>HM_VTIN5</b>	<b>Temperature sensor input</b>
<b>B46</b>	<b>GND</b>	<b>GND</b>	<b>A46</b>	<b>SIO_AGND</b>	<b>Temperature sensor GND</b>
<b>B47</b>	<b>GND</b>	<b>GND</b>	<b>A47</b>	<b>GND</b>	<b>GND</b>
<b>B48</b>	<b>GND</b>	<b>GND</b>	<b>A48</b>	<b>GND</b>	<b>GND</b>
<b>B49</b>	<b>GND</b>	<b>GND</b>	<b>A49</b>	<b>GPIO4</b>	<b>F75111_ADDR_DET (Input)</b>
<b>B50</b>	<b>GND</b>	<b>GND</b>	<b>A50</b>	<b>GPIO5</b>	<b>Indicate LAN module with</b>



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					by-pass circuit (Input)
<b>B51</b>	<b>GND</b>	<b>GND</b>	<b>A51</b>	<b>ALL_PWRGD</b>	All power OK signal
<b>B52</b>	<b>GND</b>	<b>GND</b>	<b>A52</b>	<b>GND</b>	<b>GND</b>
<b>B53</b>	<b>GND</b>	<b>GND</b>	<b>A53</b>	<b>-12V</b>	<b>-12V</b>
<b>B54</b>	<b>GND</b>	<b>GND</b>	<b>A54</b>	<b>GND</b>	<b>GND</b>
<b>B55</b>	<b>GND</b>	<b>GND</b>	<b>A55</b>	<b>GND</b>	<b>GND</b>
<b>B56</b>	<b>RXP3</b>	CPU PCI Express Receive Differential Pair (0-7)	<b>A56</b>	<b>RXP7</b>	CPU PCI Express Receive Differential Pair (0-7)
<b>B57</b>	<b>RXN3</b>	CPU PCI Express Receive Differential Pair (0-7)	<b>A57</b>	<b>RXN7</b>	CPU PCI Express Receive Differential Pair (0-7)
<b>B58</b>	<b>GND</b>	<b>GND</b>	<b>A58</b>	<b>GND</b>	<b>GND</b>
<b>B59</b>	<b>TXP3</b>	CPU PCI Express Transmit Differential Pair (0-7)	<b>A59</b>	<b>TXP7</b>	CPU PCI Express Transmit Differential Pair (0-7)
<b>B60</b>	<b>TXN3</b>	CPU PCI Express Transmit Differential Pair (0-7)	<b>A60</b>	<b>TXN7</b>	CPU PCI Express Transmit Differential Pair (0-7)
<b>B61</b>	<b>GND</b>	<b>GND</b>	<b>A61</b>	<b>GND</b>	
<b>B62</b>	<b>RXP2</b>	CPU PCI Express Receive Differential Pair (0-7)	<b>A62</b>	<b>RXP6</b>	CPU PCI Express Receive Differential Pair (0-7)
<b>B63</b>	<b>RXN2</b>	CPU PCI Express Receive Differential Pair (0-7)	<b>A63</b>	<b>RXN6</b>	CPU PCI Express Receive Differential Pair (0-7)
<b>B64</b>	<b>GND</b>	<b>GND</b>	<b>A64</b>	<b>GND</b>	<b>GND</b>
<b>B65</b>	<b>TXP2</b>	CPU PCI Express Transmit	<b>A65</b>	<b>TXP6</b>	CPU PCI Express Transmit

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		<b>Differential Pair (0-7)</b>			<b>Differential Pair (0-7)</b>
<b>B66</b>	<b>TXN2</b>	<b>CPU PCI Express Transmit Differential Pair (0-7)</b>	<b>A66</b>	<b>TXN6</b>	<b>CPU PCI Express Transmit Differential Pair (0-7)</b>
<b>B67</b>	<b>GND</b>	<b>GND</b>	<b>A67</b>	<b>GND</b>	<b>GND</b>
<b>B68</b>	<b>RXP1</b>	<b>CPU PCI Express Receive Differential Pair (0-7)</b>	<b>A68</b>	<b>RXP5</b>	<b>CPU PCI Express Receive Differential Pair (0-7)</b>
<b>B69</b>	<b>RXN1</b>	<b>CPU PCI Express Receive Differential Pair (0-7)</b>	<b>A69</b>	<b>RXN5</b>	<b>CPU PCI Express Receive Differential Pair (0-7)</b>
<b>B70</b>	<b>GND</b>	<b>GND</b>	<b>A70</b>	<b>GND</b>	<b>GND</b>
<b>B71</b>	<b>TXP1</b>	<b>CPU PCI Express Transmit Differential Pair (0-7)</b>	<b>A71</b>	<b>TXP5</b>	<b>CPU PCI Express Transmit Differential Pair (0-7)</b>
<b>B72</b>	<b>TXN1</b>	<b>CPU PCI Express Transmit Differential Pair (0-7)</b>	<b>A72</b>	<b>TXN5</b>	<b>CPU PCI Express Transmit Differential Pair (0-7)</b>
<b>B73</b>	<b>GND</b>	<b>GND</b>	<b>A72</b>	<b>GND</b>	<b>GND</b>
<b>B74</b>	<b>RXP0</b>	<b>CPU PCI Express Receive Differential Pair (0-7)</b>	<b>A74</b>	<b>RXP4</b>	<b>CPU PCI Express Receive Differential Pair (0-7)</b>
<b>B75</b>	<b>RXN0</b>	<b>CPU PCI Express Receive Differential Pair (0-7)</b>	<b>A75</b>	<b>RXN4</b>	<b>CPU PCI Express Receive Differential Pair (0-7)</b>
<b>B76</b>	<b>GND</b>	<b>GND</b>	<b>A76</b>	<b>GND</b>	<b>GND</b>
<b>B77</b>	<b>TXP0</b>	<b>CPU PCI Express Transmit Differential Pair</b>	<b>A77</b>	<b>TXP4</b>	<b>CPU PCI Express Transmit Differential Pair</b>

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		(0-7)			(0-7)
<b>B78</b>	<b>TXN0</b>	<b>CPU PCI Express Transmit Differential Pair (0-7)</b>	<b>A78</b>	<b>TXN4</b>	<b>CPU PCI Express Transmit Differential Pair (0-7)</b>
<b>B79</b>	<b>GND</b>	<b>GND</b>	<b>A79</b>	<b>GND</b>	<b>GND</b>
<b>B80</b>	<b>PCI E_CLK_P</b>	<b>Differential PCI Express Clock</b>	<b>A80</b>	<b>GND</b>	<b>GND</b>
<b>B81</b>	<b>PCI E_CLK_N</b>	<b>Differential PCI Express Clock</b>	<b>A81</b>	<b>GND</b>	<b>GND</b>
<b>B82</b>	<b>GND</b>	<b>GND</b>	<b>A82</b>	<b>GND</b>	<b>GND</b>

### CN29: PCI-E x16 Connector (Signal use PCI E X8)

<b>PIN</b>	<b>Define</b>	<b>Description</b>	<b>PIN</b>	<b>Define</b>	<b>Description</b>
<b>B1</b>	<b>GND</b>	<b>GND</b>	<b>A1</b>	<b>GND</b>	<b>GND</b>
<b>B2</b>	<b>PCI E_S EL1</b>	<b>High level ( 3.3VSB )</b>	<b>A2</b>	<b>LPCLADO</b> _	<b>LPC Multiplexed Command, Address, Data</b>
<b>B3</b>	<b>PCI E_S EL1</b>	<b>Low level ( GND )</b>	<b>A3</b>	<b>LPC LAD1</b> _	<b>LPC Multiplexed Command, Address, Data</b>
<b>B4</b>	<b>PCI E_S EL1</b>	<b>Low level ( GND )</b>	<b>A4</b>	<b>LPCLAD2</b> _	<b>LPC Multiplexed Command, Address, Data</b>
<b>B5</b>	<b>GND</b>	<b>GND</b>	<b>A5</b>	<b>LPC_LAD3</b>	<b>LPC Multiplexed Command, Address, Data</b>
<b>B6</b>	<b>GND</b>	<b>GND</b>	<b>A6</b>	<b>LPC_FRAM E#</b>	<b>LPC Frame</b>
<b>B7</b>	<b>GND</b>	<b>GND</b>	<b>A7</b>	<b>GND</b>	<b>GND</b>
<b>B8</b>	<b>SUSCLK</b>	<b>32KHz clock output</b>	<b>A8</b>	<b>CLK</b>	<b>33MHz Clock output</b>
<b>B9</b>	<b>DUAL_3V</b>	<b>3.3VSB</b>	<b>A9</b>	<b>GND</b>	<b>GND</b>
<b>B10</b>	<b>DUAL_3V</b>	<b>3.3VSB</b>	<b>A10</b>	<b>R ES ET#</b>	<b>Platform Reset</b>
<b>B11</b>	<b>DUAL_3V</b>	<b>3.3VSB</b>	<b>A11</b>	<b>GND</b>	<b>GND</b>
<b>B12</b>	<b>VCC5</b>	<b>5V</b>	<b>A12</b>	<b>VCC5</b>	<b>5V</b>
<b>B13</b>	<b>VCC5</b>	<b>5V</b>	<b>A13</b>	<b>VCC5</b>	<b>5V</b>

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B14	VCC5	5V
B15	VCC5	5V
B16	VCC5	5V
B17	VCC3	3.3V
B18	VCC3	3.3V
B19	VCC3	3.3V
B20	VCC3	3.3V
B21	VCC3	3.3V
B22	VCC3	3.3V
B23	VCC3	3.3V
B24	+12V	12V
B25	+12V	12V
B26	+12V	12V
B27	+12V	12V
B28	+12V	12V
B29	SMB_ALERT#	SMBus ALERT#
B30	PE_WAKE#	PCI Express Device Wake Event signal
B31	ATX_PWROK_C1	Power good signal from ATX power supply
B32	BYPASS#	WatchDog Bypass signal
B33	GND	GND
B34	USB_P	USB Port signal
B35	USB_N	USB Port signal
B36	USB_OC#	USB device Over current Indicators
B37	GND	GND
B38	GND	GND
B39	GND	GND
B40	GND	GND
A14	VCC5	5V
A15	VCC5	5V
A16	VCC5	5V
A17	VCC3	3.3V
A18	VCC3	3.3V
A19	VCC3	3.3V
A20	VCC3	3.3V
A21	VCC3	3.3V
A22	VCC3	3.3V
A23	VCC3	3.3V
A24	+12V	12V
A25	+12V	12V
A26	+12V	12V
A27	+12V	12V
A28	+12V	12V
A29	ATX_PWROK_D1	Power good signal from ATX power supply
A30	GPIO19	Status LED (Output)
A31	GND	GND
A32	SMB_CLK	SMBus Clock
A33	SMB_DAT	SMBus Data
A34	GND	GND
A35	FANIN	Amplitude fan tachometer input
A36	GND	GND
A37	GND	GND
A38	GND	GND
A39	GND	GND
A40	GND	GND

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<b>B41</b>	<b>GND</b>	<b>GND</b>	<b>A41</b>	<b>GND</b>	<b>GND</b>
<b>B42</b>	<b>GND</b>	<b>GND</b>	<b>A42</b>	<b>GND</b>	<b>GND</b>
<b>B43</b>	<b>GND</b>	<b>GND</b>	<b>A43</b>	<b>GND</b>	<b>GND</b>
<b>B44</b>	<b>GND</b>	<b>GND</b>	<b>A44</b>	<b>GND</b>	<b>GND</b>
<b>B45</b>	<b>GND</b>	<b>GND</b>	<b>A45</b>	<b>HM_VTIN5</b>	Temperature sensor input
<b>B46</b>	<b>GND</b>	<b>GND</b>	<b>A46</b>	<b>SIO_AGND</b>	Temperature sensor GND
<b>B47</b>	<b>GND</b>	<b>GND</b>	<b>A47</b>	<b>GND</b>	<b>GND</b>
<b>B48</b>	<b>GND</b>	<b>GND</b>	<b>A48</b>	<b>GND</b>	<b>GND</b>
<b>B49</b>	<b>GND</b>	<b>GND</b>	<b>A49</b>	<b>GPIO2</b>	F75111_ADDR_DET (Input)
<b>B50</b>	<b>GND</b>	<b>GND</b>	<b>A50</b>	<b>GPIO3</b>	Indicate LAN module with by-pass circuit (Input)
<b>B51</b>	<b>GND</b>	<b>GND</b>	<b>A51</b>	<b>ALL_PWRGD</b>	All power OK signal
<b>B52</b>	<b>GND</b>	<b>GND</b>	<b>A52</b>	<b>GND</b>	<b>GND</b>
<b>B53</b>	<b>GND</b>	<b>GND</b>	<b>A53</b>	<b>-12V</b>	<b>-12V</b>
<b>B54</b>	<b>GND</b>	<b>GND</b>	<b>A54</b>	<b>GND</b>	<b>GND</b>
<b>B55</b>	<b>GND</b>	<b>GND</b>	<b>A55</b>	<b>GND</b>	<b>GND</b>
<b>B56</b>	<b>RXP3</b>	CPU PCI Express Receive Differential Pair (8-15)	<b>A56</b>	<b>RXP7</b>	CPU PCI Express Receive Differential Pair (8-15)
<b>B57</b>	<b>RXN3</b>	CPU PCI Express Receive Differential Pair (8-15)	<b>A57</b>	<b>RXN7</b>	CPU PCI Express Receive Differential Pair (8-15)
<b>B58</b>	<b>GND</b>	<b>GND</b>	<b>A58</b>	<b>GND</b>	<b>GND</b>
<b>B59</b>	<b>TXP3</b>	CPU PCI Express Transmit Differential Pair (8-15)	<b>A59</b>	<b>TXP7</b>	CPU PCI Express Transmit Differential Pair (8-15)
<b>B60</b>	<b>TXN3</b>	CPU PCI Express Transmit	<b>A60</b>	<b>TXN7</b>	CPU PCI Express Transmit

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		Differential Pair (8-15)			Differential Pair (8-15)
<b>B61</b>	<b>GND</b>	<b>GND</b>	<b>A61</b>	<b>GND</b>	<b>GND</b>
<b>B62</b>	<b>RXP2</b>	<b>CPU PCI Express Receive Differential Pair (8-15)</b>	<b>A62</b>	<b>RXP6</b>	<b>CPU PCI Express Receive Differential Pair (8-15)</b>
<b>B63</b>	<b>RXN2</b>	<b>CPU PCI Express Receive Differential Pair (8-15)</b>	<b>A63</b>	<b>RXN6</b>	<b>CPU PCI Express Receive Differential Pair (8-15)</b>
<b>B64</b>	<b>GND</b>	<b>GND</b>	<b>A64</b>	<b>GND</b>	<b>GND</b>
<b>B65</b>	<b>TXP2</b>	<b>CPU PCI Express Transmit Differential Pair (8-15)</b>	<b>A65</b>	<b>TXP6</b>	<b>CPU PCI Express Transmit Differential Pair (8-15)</b>
<b>B66</b>	<b>TXN2</b>	<b>CPU PCI Express Transmit Differential Pair (8-15)</b>	<b>A66</b>	<b>TXN6</b>	<b>CPU PCI Express Transmit Differential Pair (8-15)</b>
<b>B67</b>	<b>GND</b>	<b>GND</b>	<b>A67</b>	<b>GND</b>	<b>GND</b>
<b>B68</b>	<b>RXP1</b>	<b>CPU PCI Express Receive Differential Pair (8-15)</b>	<b>A68</b>	<b>RXP5</b>	<b>CPU PCI Express Receive Differential Pair (8-15)</b>
<b>B69</b>	<b>RXN1</b>	<b>CPU PCI Express Receive Differential Pair (8-15)</b>	<b>A69</b>	<b>RXN5</b>	<b>CPU PCI Express Receive Differential Pair (8-15)</b>
<b>B70</b>	<b>GND</b>	<b>GND</b>	<b>A70</b>	<b>GND</b>	<b>GND</b>
<b>B71</b>	<b>TXP1</b>	<b>CPU PCI Express Transmit Differential Pair (8-15)</b>	<b>A71</b>	<b>TXP5</b>	<b>CPU PCI Express Transmit Differential Pair (8-15)</b>
<b>B72</b>	<b>TXN1</b>	<b>CPU PCI Express Transmit Differential Pair</b>	<b>A72</b>	<b>TXN5</b>	<b>CPU PCI Express Transmit Differential Pair</b>

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		(8-15)			(8-15)
<b>B73</b>	<b>GND</b>	<b>GND</b>	<b>A72</b>	<b>GND</b>	<b>GND</b>
<b>B74</b>	<b>RXPO</b>	<b>CPU PCI Express Receive Differential Pair (8-15)</b>	<b>A74</b>	<b>RXP4</b>	<b>CPU PCI Express Receive Differential Pair (8-15)</b>
<b>B75</b>	<b>RXNO</b>	<b>CPU PCI Express Receive Differential Pair (8-15)</b>	<b>A75</b>	<b>RXN4</b>	<b>CPU PCI Express Receive Differential Pair (8-15)</b>
<b>B76</b>	<b>GND</b>	<b>GND</b>	<b>A76</b>	<b>GND</b>	<b>GND</b>
<b>B77</b>	<b>TXPO</b>	<b>CPU PCI Express Transmit Differential Pair (8-15)</b>	<b>A77</b>	<b>TXP4</b>	<b>CPU PCI Express Transmit Differential Pair (8-15)</b>
<b>B78</b>	<b>TXNO</b>	<b>CPU PCI Express Transmit Differential Pair (8-15)</b>	<b>A78</b>	<b>TXN4</b>	<b>CPU PCI Express Transmit Differential Pair (8-15)</b>
<b>B79</b>	<b>GND</b>	<b>GND</b>	<b>A79</b>	<b>GND</b>	<b>GND</b>
<b>B80</b>	<b>PCI E_CLK_P</b>	<b>Differential PCI Express Clock</b>	<b>A80</b>	<b>GND</b>	<b>GND</b>
<b>B81</b>	<b>PCI E_CLK_N</b>	<b>Differential PCI Express Clock</b>	<b>A81</b>	<b>GND</b>	<b>GND</b>
<b>B82</b>	<b>GND</b>	<b>GND</b>	<b>A82</b>	<b>GND</b>	<b>GND</b>

### CN30: PCI-E x16 Connector (Signal use PCI E X4)

<b>PIN</b>	<b>Define</b>	<b>Description</b>	<b>PIN</b>	<b>Define</b>	<b>Description</b>
<b>B1</b>	<b>GND</b>	<b>GND</b>	<b>A1</b>	<b>GND</b>	<b>GND</b>
<b>B2</b>	<b>PCI E_S EL1</b>	<b>Low level ( GND )</b>	<b>A2</b>	<b>LPC_LADO</b>	<b>LPC Multiplexed Command, Address, Data</b>
<b>B3</b>	<b>PCI E_S EL1</b>	<b>Low level ( GND )</b>	<b>A3</b>	<b>LPC_LAD1</b>	<b>LPC Multiplexed Command, Address, Data</b>

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B4	PCI E_S EL1	High level ( 3.3VSB )	A4	LPC LAD2 —	LPC Multiplexed Command, Address, Data
B5	GND	GND	A5	LPC LAD3 —	LPC Multiplexed Command, Address, Data
B6	GND	GND	A6	LPC_FRAM E#	LPC Frame
B7	GND	GND	A7	GND	GND
B8	SUSCLK	32KHz clock output	A8	CLK	33MHz Clock output
B9	DUAL_3V	3.3VSB	A9	GND	GND
B10	DUAL_3V	3.3VSB	A10	R ES ET#	Platform Reset
B11	DUAL_3V	3.3VSB	A11	GND	GND
B12	VCC5	5V	A12	VCC5	5V
B13	VCC5	5V	A13	VCC5	5V
B14	VCC5	5V	A14	VCC5	5V
B15	VCC5	5V	A15	VCC5	5V
B16	VCC5	5V	A16	VCC5	5V
B17	VCC3	3.3V	A17	VCC3	3.3V
B18	VCC3	3.3V	A18	VCC3	3.3V
B19	VCC3	3.3V	A19	VCC3	3.3V
B20	VCC3	3.3V	A20	VCC3	3.3V
B21	VCC3	3.3V	A21	VCC3	3.3V
B22	VCC3	3.3V	A22	VCC3	3.3V
B23	VCC3	3.3V	A23	VCC3	3.3V
B24	+12V	12V	A24	+12V	12V
B25	+12V	12V	A25	+12V	12V
B26	+12V	12V	A26	+12V	12V
B27	+12V	12V	A27	+12V	12V
B28	+12V	12V	A28	+12V	12V
B29	SMB_AL ERT#	SMBus AL ERT#	A29	ATX_PWROK_F1	Power good signal from ATX power supply
B30	P E_WAK E#	PCI Express Device Wake Event signal	A30	GPIO16	Status LED (Output)



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<b>B31</b>	<b>ATX_PWROK_E1</b>	<b>Power good signal from ATX power supply</b>	<b>A31</b>	<b>GND</b>	<b>GND</b>
<b>B32</b>	<b>BYPASS#</b>	<b>WatchDog By Pass signal</b>	<b>A32</b>	<b>SMB_CLK</b>	<b>SMBus Clock</b>
<b>B33</b>	<b>GND</b>	<b>GND</b>	<b>A33</b>	<b>SMB_DAT</b>	<b>SMBus Data</b>
<b>B34</b>	<b>USB_P</b>	<b>USB Port signal</b>	<b>A34</b>	<b>GND</b>	<b>GND</b>
<b>B35</b>	<b>USB_N</b>	<b>USB Port signal</b>	<b>A35</b>	<b>FANIN</b>	<b>Amplitude fan tachometer input</b>
<b>B36</b>	<b>USB_OC#</b>	<b>USB device Over current Indicators</b>	<b>A36</b>	<b>GND</b>	<b>GND</b>
<b>B37</b>	<b>GND</b>	<b>GND</b>	<b>A37</b>	<b>GND</b>	<b>GND</b>
<b>B38</b>	<b>GND</b>	<b>GND</b>	<b>A38</b>	<b>GND</b>	<b>GND</b>
<b>B39</b>	<b>GND</b>	<b>GND</b>	<b>A39</b>	<b>GND</b>	<b>GND</b>
<b>B40</b>	<b>GND</b>	<b>GND</b>	<b>A40</b>	<b>GND</b>	<b>GND</b>
<b>B41</b>	<b>GND</b>	<b>GND</b>	<b>A41</b>	<b>GND</b>	<b>GND</b>
<b>B42</b>	<b>GND</b>	<b>GND</b>	<b>A42</b>	<b>GND</b>	<b>GND</b>
<b>B43</b>	<b>GND</b>	<b>GND</b>	<b>A43</b>	<b>GND</b>	<b>GND</b>
<b>B44</b>	<b>GND</b>	<b>GND</b>	<b>A44</b>	<b>GND</b>	<b>GND</b>
<b>B45</b>	<b>GND</b>	<b>GND</b>	<b>A45</b>	<b>HM_VTIN5</b>	<b>Temperature sensor</b>
<b>B46</b>	<b>GND</b>	<b>GND</b>	<b>A46</b>	<b>GND</b>	<b>Temperature sensor GND</b>
<b>B47</b>	<b>GND</b>	<b>GND</b>	<b>A47</b>	<b>GND</b>	<b>GND</b>
<b>B48</b>	<b>GND</b>	<b>GND</b>	<b>A48</b>	<b>GND</b>	<b>GND</b>
<b>B49</b>	<b>GND</b>	<b>GND</b>	<b>A49</b>	<b>GPIO0</b>	<b>F75111_ADDR_DET (Input)</b>
<b>B50</b>	<b>GND</b>	<b>GND</b>	<b>A50</b>	<b>GPIO1</b>	<b>Indicate LAN module with bypass circuit (Input)</b>
<b>B51</b>	<b>GND</b>	<b>GND</b>	<b>A51</b>	<b>PWRGD</b>	<b>All power OK signal</b>
<b>B52</b>	<b>GND</b>	<b>GND</b>	<b>A52</b>	<b>GND</b>	<b>GND</b>

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<b>B53</b>	<b>GND</b>	<b>GND</b>	<b>A53</b>	<b>-12V</b>	<b>-12V</b>
<b>B54</b>	<b>GND</b>	<b>GND</b>	<b>A54</b>	<b>GND</b>	<b>GND</b>
<b>B55</b>	<b>GND</b>	<b>GND</b>	<b>A55</b>	<b>GND</b>	<b>GND</b>
<b>B56</b>	<b>RXP3</b>	<b>PCH PCI Express Receive Differential Pair (0-3)</b>	<b>A56</b>	<b>NC</b>	<b>No connect</b>
<b>B57</b>	<b>RXN3</b>	<b>PCH PCI Express Receive Differential Pair (0-3)</b>	<b>A57</b>	<b>NC</b>	<b>No connect</b>
<b>B58</b>	<b>GND</b>	<b>GND</b>	<b>A58</b>	<b>GND</b>	<b>GND</b>
<b>B59</b>	<b>TXP3</b>	<b>PCH PCI Express Transmit Differential Pair (0-3)</b>	<b>A59</b>	<b>NC</b>	<b>No connect</b>
<b>B60</b>	<b>TXN3</b>	<b>PCH PCI Express Transmit Differential Pair (0-3)</b>	<b>A60</b>	<b>NC</b>	<b>No connect</b>
<b>B61</b>	<b>GND</b>	<b>GND</b>	<b>A61</b>	<b>GND</b>	<b>GND</b>
<b>B62</b>	<b>RXP2</b>	<b>PCH PCI Express Receive Differential Pair (0-3)</b>	<b>A62</b>	<b>NC</b>	<b>No connect</b>
<b>B63</b>	<b>RXN2</b>	<b>PCH PCI Express Receive Differential Pair (0-3)</b>	<b>A63</b>	<b>NC</b>	<b>No connect</b>
<b>B64</b>	<b>GND</b>	<b>GND</b>	<b>A64</b>	<b>GND</b>	<b>GND</b>
<b>B65</b>	<b>TXP2</b>	<b>PCH PCI</b>	<b>A65</b>	<b>NC</b>	<b>No connect</b>

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		<b>Express Transmit Differential Pair (0-3)</b>			
<b>B66</b>	<b>TXN2</b>	<b>PCH PCI Express Transmit Differential Pair (0-3)</b>	<b>A66</b>	<b>NC</b>	<b>No connect</b>
<b>B67</b>	<b>GND</b>	<b>GND</b>	<b>A67</b>	<b>GND</b>	<b>GND</b>
<b>B68</b>	<b>RXP1</b>	<b>PCH PCI Express Receive Differential Pair (0-3)</b>	<b>A68</b>	<b>NC</b>	<b>No connect</b>
<b>B69</b>	<b>RXN1</b>	<b>PCH PCI Express Receive Differential Pair (0-3)</b>	<b>A69</b>	<b>NC</b>	<b>No connect</b>
<b>B70</b>	<b>GND</b>	<b>GND</b>	<b>A70</b>	<b>GND</b>	<b>GND</b>
<b>B71</b>	<b>TXP1</b>	<b>PCH PCI Express Transmit Differential Pair (0-3)</b>	<b>A71</b>	<b>NC</b>	<b>No connect</b>
<b>B72</b>	<b>TXN1</b>	<b>PCH PCI Express Transmit Differential Pair (0-3)</b>	<b>A72</b>	<b>NC</b>	<b>No connect</b>
<b>B73</b>	<b>GND</b>	<b>GND</b>	<b>A72</b>	<b>GND</b>	<b>GND</b>
<b>B74</b>	<b>RXP0</b>	<b>PCH PCI Express Receive Differential Pair (0-3)</b>	<b>A74</b>	<b>NC</b>	<b>No connect</b>

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<b>B75</b>	<b>RXN0</b>	<b>PCH PCI Express Receive Differential Pair (0-3)</b>	<b>A75</b>	<b>NC</b>	<b>No connect</b>
<b>B76</b>	<b>GND</b>	<b>GND</b>	<b>A76</b>	<b>GND</b>	<b>GND</b>
<b>B77</b>	<b>TXP0</b>	<b>PCH PCI Express Transmit Differential Pair (0-3)</b>	<b>A77</b>	<b>NC</b>	<b>No connect</b>
<b>B78</b>	<b>TXN0</b>	<b>PCH PCI Express Transmit Differential Pair (0-3)</b>	<b>A78</b>	<b>NC</b>	<b>No connect</b>
<b>B79</b>	<b>GND</b>	<b>GND</b>	<b>A79</b>	<b>GND</b>	<b>GND</b>
<b>B80</b>	<b>PCI E_CLK_P</b>	<b>Differential PCI Express Clock</b>	<b>A80</b>	<b>GND</b>	<b>GND</b>
<b>B81</b>	<b>PCI E_CLK_N</b>	<b>Differential PCI Express Clock</b>	<b>A81</b>	<b>GND</b>	<b>GND</b>
<b>B82</b>	<b>GND</b>	<b>GND</b>	<b>A82</b>	<b>GND</b>	<b>GND</b>

### **CN31: PCI-E x8 Connector (Signal use 4 X (PCI E X1))**

<b>PIN</b>	<b>Define</b>	<b>Description</b>	<b>PIN</b>	<b>Define</b>	<b>Description</b>
<b>B1</b>	<b>+12V</b>	<b>12V</b>	<b>A1</b>	<b>GND</b>	<b>GND</b>
<b>B2</b>	<b>+12V</b>	<b>12V</b>	<b>A2</b>	<b>+12V</b>	<b>12V</b>
<b>B3</b>	<b>+12V</b>	<b>12V</b>	<b>A3</b>	<b>+12V</b>	<b>12V</b>
<b>B4</b>	<b>GND</b>	<b>GND</b>	<b>A4</b>	<b>GND</b>	<b>GND</b>
<b>B5</b>	<b>SMB_CLK</b>	<b>SMBus Clock</b>	<b>A5</b>	<b>VCC3</b>	<b>3.3V</b>
<b>B6</b>	<b>SMB_DAT</b>	<b>SMBus Data</b>	<b>A6</b>	<b>VCC3</b>	<b>3.3V</b>
<b>B7</b>	<b>GND</b>	<b>GND</b>	<b>A7</b>	<b>GPI027</b>	<b>For R176 LAN1 Latch control (Output)</b>

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<b>B8</b>	<b>VCC3</b>	<b>3.3V</b>	<b>A8</b>	<b>VCC3</b>	<b>3.3V</b>
<b>B9</b>	<b>VCC5</b>	<b>5V</b>	<b>A9</b>	<b>VCC3</b>	<b>3.3V</b>
<b>B10</b>	<b>VCC3P3_STBY</b>	<b>3.3VSB</b>	<b>A10</b>	<b>VCC3</b>	<b>3.3V</b>
<b>B11</b>	<b>P E_WAK E#</b>	<b>PCI Express Device Wake Event signal</b>	<b>A11</b>	<b>R ES ET#</b>	<b>Platform Reset</b>
<b>B12</b>	<b>PWRGD</b>	<b>Power good signal from ATX power supply</b>	<b>A12</b>	<b>GND</b>	<b>GND</b>
<b>B13</b>	<b>GND</b>	<b>GND</b>	<b>A13</b>	<b>PCI E_CLK_P</b>	<b>Differential PCI Express Clock</b>
<b>B14</b>	<b>TXP0</b>	<b>PCH PCI Express Transmit Differential Pair (4-7)</b>	<b>A14</b>	<b>PCI E_CLK_N</b>	<b>Differential PCI Express Clock</b>
<b>B15</b>	<b>TXN0</b>	<b>PCH PCI Express Transmit Differential Pair (4-7)</b>	<b>A15</b>	<b>GND</b>	<b>GND</b>
<b>B16</b>	<b>GND</b>	<b>GND</b>	<b>A16</b>	<b>RXP0</b>	<b>PCH PCI Express Receive Differential Pair (4-7)</b>
<b>B17</b>	<b>VCC5</b>	<b>5V</b>	<b>A17</b>	<b>RXN0</b>	<b>PCH PCI Express Receive Differential Pair (4-7)</b>
<b>B18</b>	<b>GND</b>	<b>GND</b>	<b>A18</b>	<b>GND</b>	<b>GND</b>
<b>B19</b>	<b>TXP1</b>	<b>PCH PCI Express Transmit Differential Pair (4-7)</b>	<b>A19</b>	<b>GPI015</b>	<b>For R176 LAN1 Latch control (Output)</b>
<b>B20</b>	<b>TXN1</b>	<b>PCH PCI Express Transmit Differential Pair (4-7)</b>	<b>A20</b>	<b>GND</b>	<b>GND</b>
<b>B21</b>	<b>GND</b>	<b>GND</b>	<b>A21</b>	<b>RXP1</b>	<b>PCH PCI Express</b>

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					<b>Receive Differential Pair (4-7)</b>
<b>B22</b>	<b>GND</b>	<b>GND</b>		<b>A22</b>	<b>RXN1</b> <b>PCH PCI Express Receive Differential Pair (4-7)</b>
<b>B23</b>	<b>TXP2</b>	<b>PCH PCI Express Transmit Differential Pair (4-7)</b>		<b>A23</b>	<b>GND</b> <b>GND</b>
<b>B24</b>	<b>TXN2</b>	<b>PCH PCI Express Transmit Differential Pair (4-7)</b>		<b>A24</b>	<b>GND</b> <b>GND</b>
<b>B25</b>	<b>GND</b>	<b>GND</b>		<b>A25</b>	<b>RXP2</b> <b>PCH PCI Express Receive Differential Pair (4-7)</b>
<b>B26</b>	<b>GND</b>	<b>GND</b>		<b>A26</b>	<b>RXN2</b> <b>PCH PCI Express Receive Differential Pair (4-7)</b>
<b>B27</b>	<b>TXP3</b>	<b>PCH PCI Express Transmit Differential Pair (4-7)</b>		<b>A27</b>	<b>GND</b> <b>GND</b>
<b>B28</b>	<b>TXN3</b>	<b>PCH PCI Express Transmit Differential Pair (4-7)</b>		<b>A28</b>	<b>GND</b> <b>GND</b>
<b>B29</b>	<b>GND</b>	<b>GND</b>		<b>A29</b>	<b>RXP3</b> <b>PCH PCI Express Receive Differential Pair (4-7)</b>
<b>B30</b>	<b>BYPASS#</b>	<b>WatchDog By Pass</b>		<b>A30</b>	<b>RXN3</b> <b>PCH PCI Express Receive</b>

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

		<b>(Output)</b>			<b>Differential Pair (4-7)</b>
<b>B31</b>	<b>GPIO31</b>	<b>For R176 LAN1 By Pass control (Output)</b>	<b>A31</b>	<b>GND</b>	<b>GND</b>
<b>B32</b>	<b>GND</b>	<b>GND</b>	<b>A32</b>	<b>GPIO57</b>	<b>For R176 LAN2 By Pass control (Output)</b>
<b>B33</b>	<b>RTSA#</b>	<b>Console Port RTS signal</b>	<b>A33</b>	<b>GPIO28</b>	<b>For R176 LAN2 Latch control (Output)</b>
<b>B34</b>	<b>DTRA#</b>	<b>Console Port DTR signal</b>	<b>A34</b>	<b>GND</b>	<b>GND</b>
<b>B35</b>	<b>GND</b>	<b>GND</b>	<b>A35</b>	<b>USB_P</b>	<b>USB Port signal</b>
<b>B36</b>	<b>GND</b>	<b>GND</b>	<b>A36</b>	<b>USB_N</b>	<b>USB Port signal</b>
<b>B37</b>	<b>SOUTA</b>	<b>Console Port SOUT signal</b>	<b>A37</b>	<b>GND</b>	<b>GND</b>
<b>B38</b>	<b>RIA#</b>	<b>Console Port RI signal</b>	<b>A38</b>	<b>GND</b>	<b>GND</b>
<b>B39</b>	<b>GND</b>	<b>GND</b>	<b>A39</b>	<b>USB_OC#</b>	<b>USB device Over current Indicators</b>
<b>B40</b>	<b>GND</b>	<b>GND</b>	<b>A40</b>	<b>GPO4</b>	<b>For R176 GPIO LED Control (Output)</b>
<b>B41</b>	<b>CTSA#</b>	<b>Console Port CTS signal</b>	<b>A41</b>	<b>GND</b>	<b>GND</b>
<b>B42</b>	<b>DSRA#</b>	<b>Console Port DSR signal</b>	<b>A42</b>	<b>GND</b>	<b>GND</b>
<b>B43</b>	<b>GND</b>	<b>GND</b>	<b>A43</b>	<b>GPO5</b>	<b>For R176 GPIO LED Control (Output)</b>

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

<b>B44</b>	<b>GND</b>	<b>GND</b>	<b>A44</b>	<b>GPO6</b>	<b>For R176 GPIO LED Control (Output)</b>
<b>B45</b>	<b>SINA</b>	<b>Console Port SIN signal</b>	<b>A45</b>	<b>GND</b>	<b>GND</b>
<b>B46</b>	<b>DCDA#</b>	<b>Console Port DCD signal</b>	<b>A46</b>	<b>GND</b>	<b>GND</b>
<b>B47</b>	<b>GND</b>	<b>GND</b>	<b>A47</b>	<b>GPO7</b>	<b>For R176 GPIO LED Control (Output)</b>
<b>B48</b>	<b>GPIO56</b>	<b>For R176 LAN2 Latch control (Output)</b>	<b>A48</b>	<b>HDD_LED</b>	<b>HDD LED</b>
<b>B49</b>	<b>GND</b>	<b>GND</b>	<b>A49</b>	<b>GND</b>	<b>GND</b>



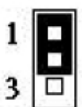

## JP1: PEG PORT CONFIG SELECT

Pin		Setting
	1-2	PCIE 2X8 (Default)
	2-3	PCI-E 1X 8, 2X4



## JP2: V\_SA VOLTAGE SELECT

Pin		Setting
	Open	0.925V (Default)
	Close	0.85V



## JP3: RESET & GPI SELECT

Pin		Setting
	1-2	GPI
	2-3	RESET (Default)



## JP4: WATCH DOG & BY-PASS:

Pin		Setting
	1-2	BY-PASS
	2-3	WATCH DOG (Default)



## JP5: Clear CMOS

Pin		Setting
	1-2	NORMAL (Default)
	2-3	Clear CMOS

## JP6: AT Et ATXMODE SELECT:

Pin		Setting
	1-2	ATX MODE (Default)
	2-3	AT MODE

## JP 7: ATX Et AT Power SELECT:

Pin		Setting
	1-2	ATX (Default)
	2-3	AT

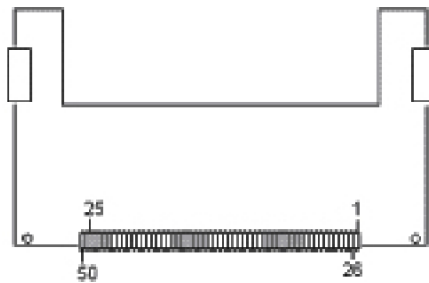
## User's Manual

### 2.3 CompactFlash™ Card Socket Pin Define

CompactFlash™ card is a small removable mass storage device. It can provide complete PC/CIA-ATA functionality and compatibility plus True IDE functionality compatible with ATA/ATAPI-4.

CompactFlash™ storage products are solid state form factor, it means they contain no moving parts. Thus, it provides users with much greater protection of the data than conventional magnetic disk device.

Pin	Assignment	Pin	Assignment	Pin	Assignment	Pin	Assignment	Pin	Assignment
1	Ground	11	Ground	21	D00	31	D15	41	RESET
2	D03	12	Ground	22	D01	32	CS	42	ORDY
3	D04	13	VCC	23	D02	33	NC	43	DREG
4	D05	14	Ground	24	WP	34	IOR	44	DACK
5	D06	15	Ground	25	NC	35	IOW	45	LED
6	D07	16	Ground	26	NC	36	WE	46	BVD
7	CS	17	Ground	27	D11	37	RDY/BSY	47	D08
8	Ground	18	A02	28	D12	38	VCC	48	D09
9	Ground	19	A01	29	D13 <sup>0</sup>	39	SCSE	49	D10
10	Ground	20	A00	30	D14	40	NC	50	Ground



# User's Manual

## Chapter 3. Optional GbE Module Et Riser Card Setting

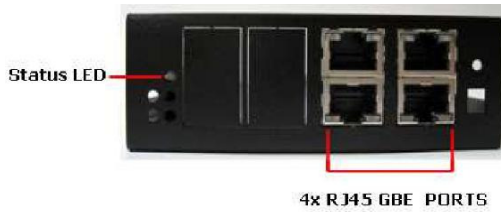
The PL-80460 can offer various GbE module combinations to match various applications and market demand.

### 3.1 R202A: Expansion module with 4 RJ45 GbE ports.

R202A is a four GbE Copper Ethernet module. The golden edge fingers to be



connected with CN28/29/30 proprietary connector of PL-80460 board.

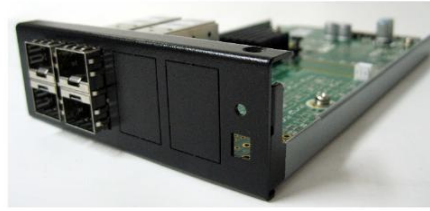


INTEL 82580

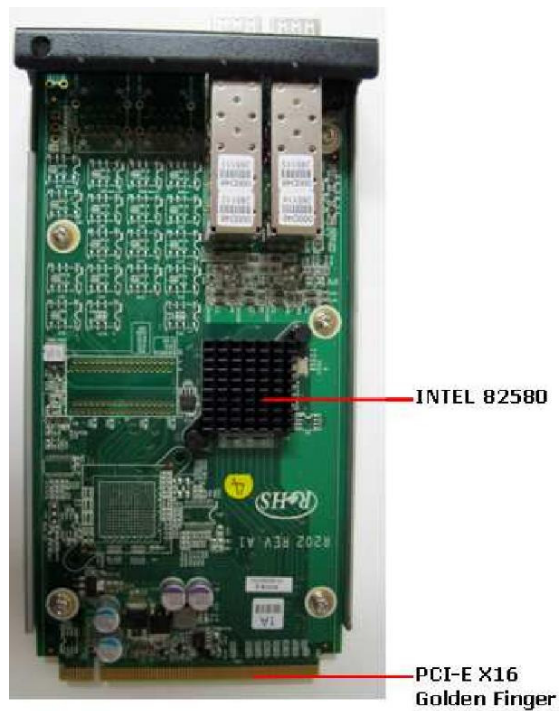
PCI-E X16 Golden Finger

## User's Manual

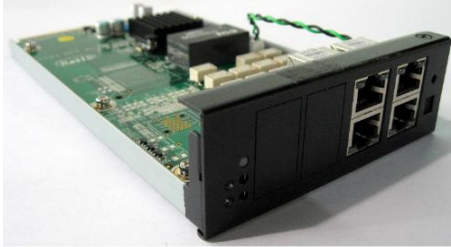
### 3.2 R202B: Expansion module with 4 SFP ports



R202B is a four SFP Ethernet module. The golden edge fingers to be connected with CN28/29/30 proprietary connector of PL-80460 board.

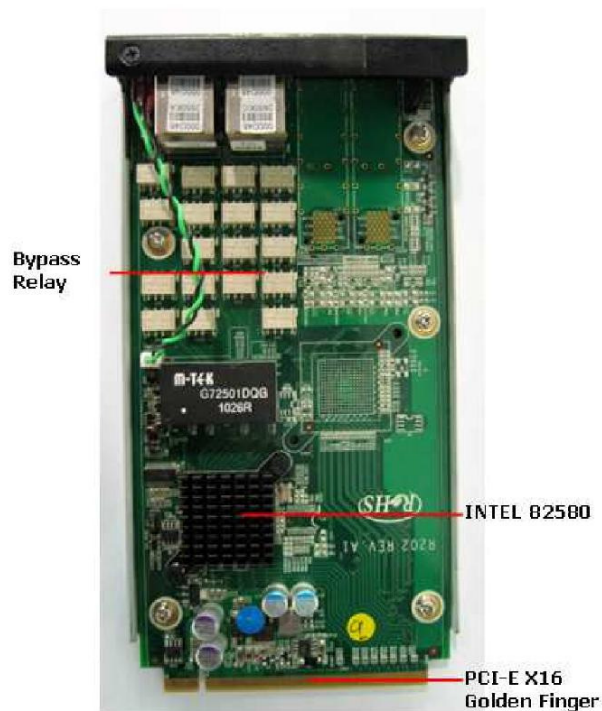


## 3.3 R202C: Expansion module with 4 RJ45 GbE ports, two pairs



bypass.

R202C is a four RJ45 GbE ports with two pairs bypass module. The golden edge fingers connect with the CN28/29/30 proprietary connector of PL-80460 board.

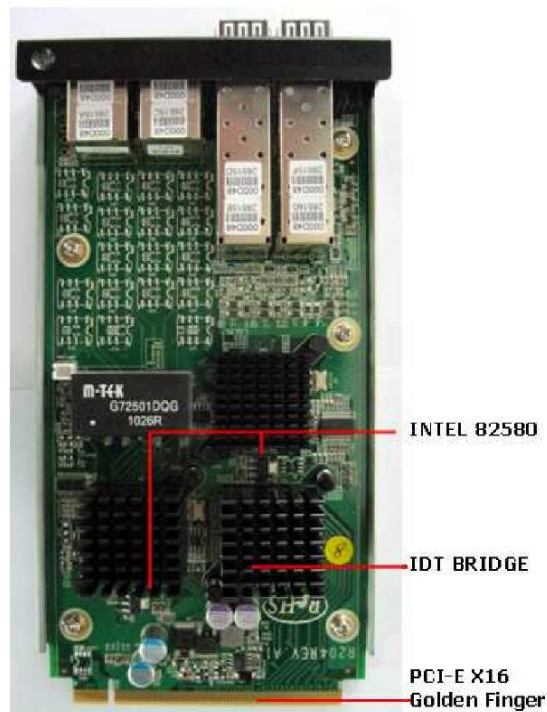
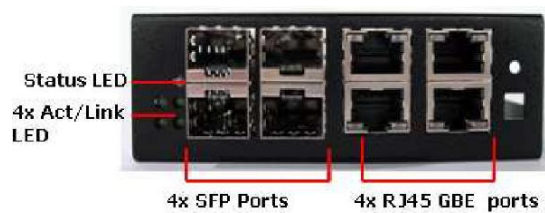


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### 3.4 R204A: Expansion module with 4 SFP ports Et 4 RJ45 GbE ports.

R204A is a four RJ45 GbE ports and four SFP ports Ethernet module. The golden edge fingers to be connected with CN28/29/30 proprietary connector of PL-80460 board.





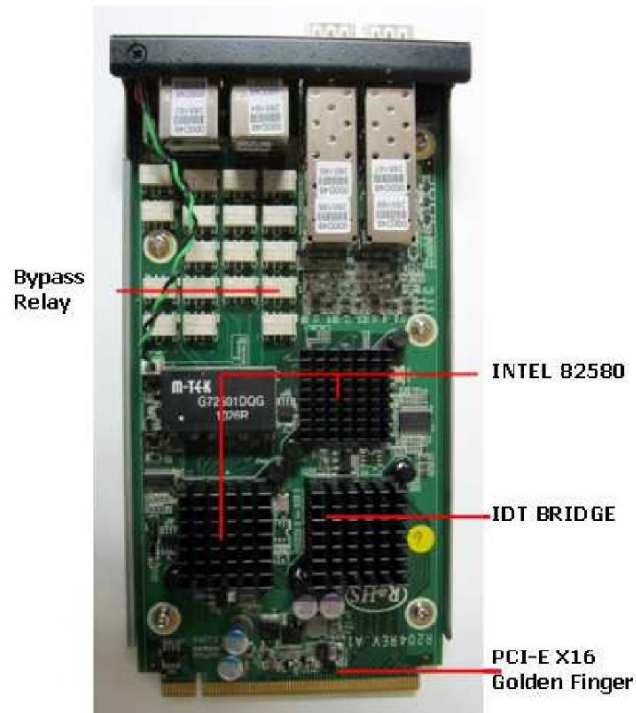
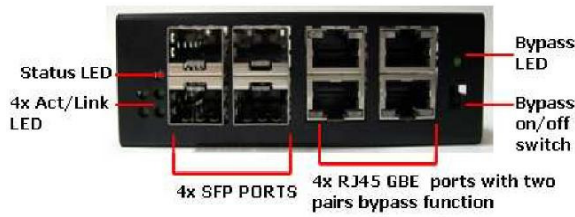
# User's Manual

## 3.5 R204B: Eth Expansion module with 4 SFP ports Et 4 RJ45 GbE ports



with two pairs bypass.

R204B is a four RJ45 GbE ports and four SFP ports with two pairs bypass Ethernet module. The golden edge fingers to be connected with CN28/29/30 proprietary connector of PL-80460 board



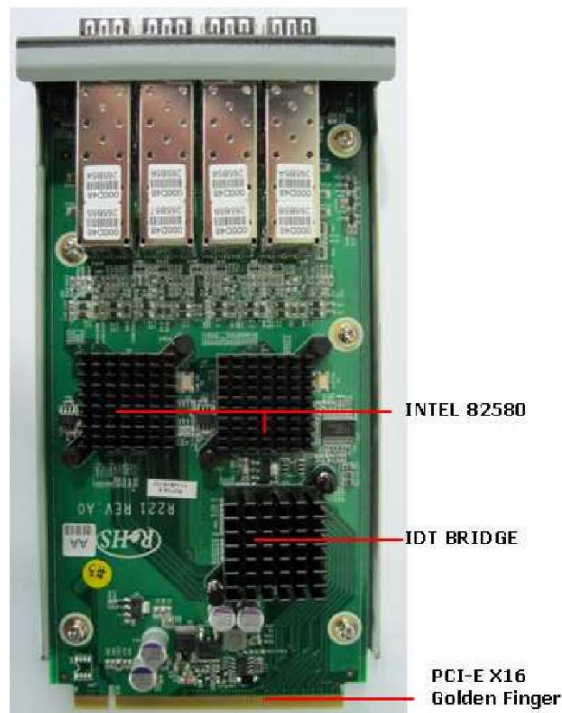
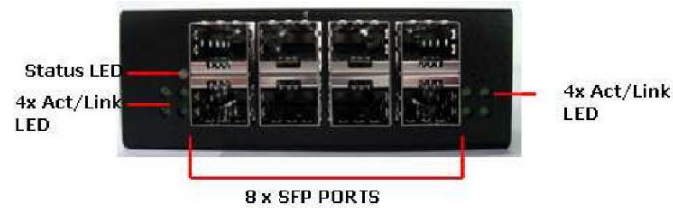


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### 3.6 R221A: Expansion module with 8 SFP ports.

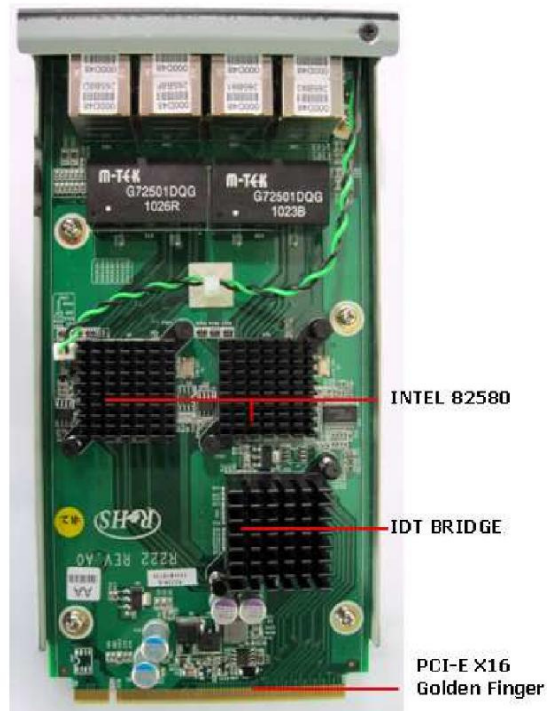
R221A is a eight SFP ports Ethernet module. The golden edge fingers connect with CN28/29/30 proprietary connector of PL-80460 board.





### 3. 7 R222A: Expansion module with 8 RJ45 GbE ports

R222A is a eight RJ45 GbE ports and four SFP ports with two pairs bypass Ethernet module. The golden edge fingers to be connected with CN28/29/30 proprietary connector of PL-80460 board

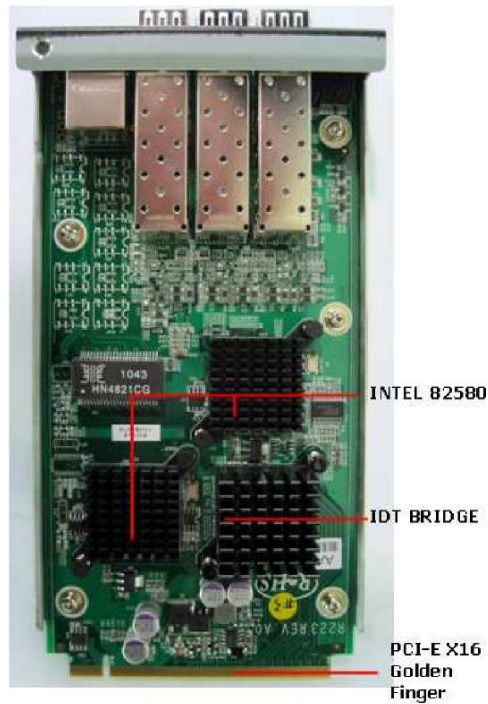
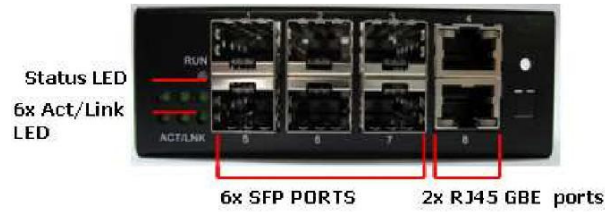


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### 3.8 R223A: Expansion module with 6 SFP ports Et 2 RJ45 GbE ports.

R204B is a four RJ45 GbE ports and four SFP ports with two pairs bypass Ethernet module. The golden edge fingers to be connected with CN2 8/29/30 proprietary connector of PL-80460 board

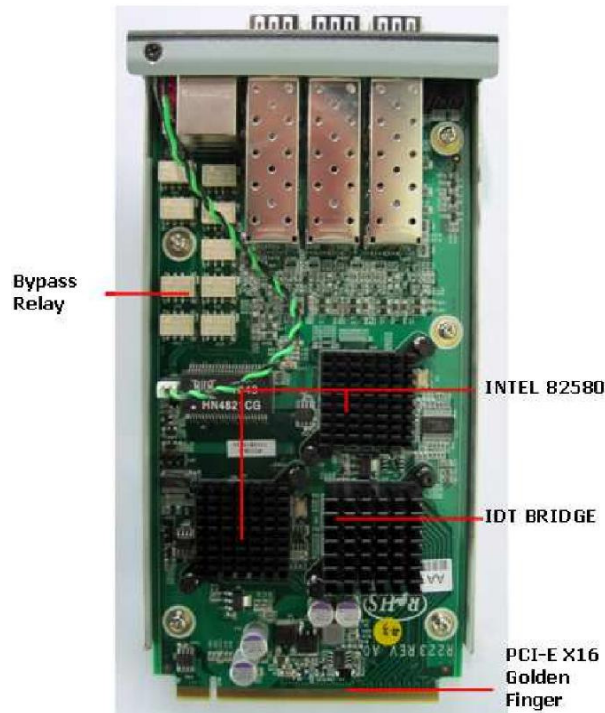
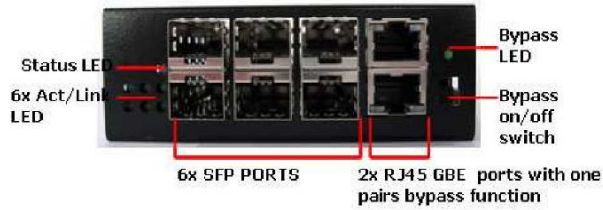


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## 3.9 R223B: Expansion module with 6 SFP ports Et 2 RJ45 GbE ports with one pairs bypass.

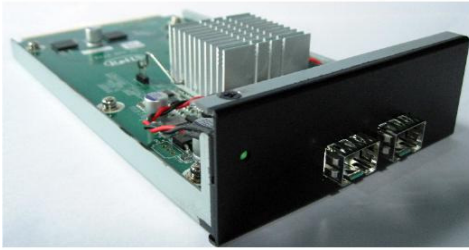


R204B is a four RJ45 GbE ports and four SFP ports with two pairs bypass Ethernet module. The golden edge fingers to be connected with CN2 8/29/30 proprietary connector of PL-80460 board



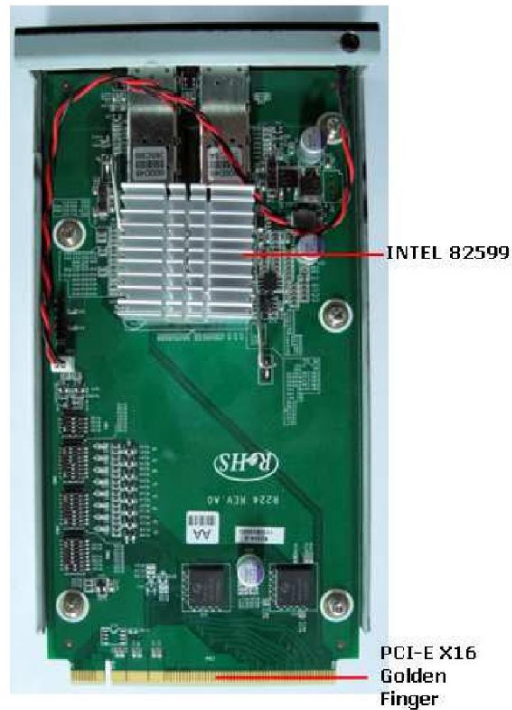


# User's Manual



### 3.10 R224A: Expansion module with 2 SFP+ 10GbE ports

R204B is a four RJ45 GbE ports and four SFP ports with two pairs bypass Ethernet module. The golden edge fingers to be connected with CN28/29/30 proprietary connector of PL-80460 board



## User's Manual

### Chapter 4. Utility & Driver Installation

Carefully install the GbE modules before you install the OS, driver or other software.

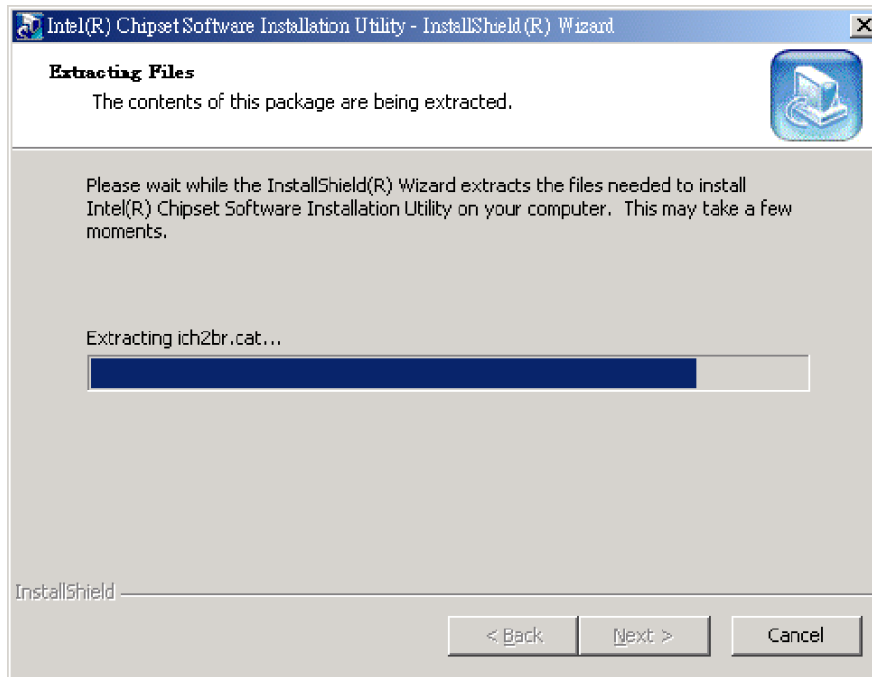
#### 4.1 Operating System Support

PL-80460 can support Windows® and Linux® operation system as follows. Before installation, please check your OS version. If your OS is not in the following list, please upgrade your OS version.

OS	Version
<b>Windows®</b>	<b>Windows Vista x64</b> <b>Windows Server 2003</b> <b>Windows Server 2008</b> <b>Windows XP SP2</b> <b>Windows XP SP3</b> <b>Windows 7</b>
<b>Linux &amp; Unix Like</b>	<b>Fedora 9 x64 (2.6.25)</b> <b>Redhat Enterprise 5.0 x64 Version 5.2 (2.6.18)</b> <b>Redhat Enterprise 5.0 x64 Version 5.3 (2.6.18-128.el5)</b> <b>Fedora Core 5 (2.6.15)</b> <b>Fedora 8 (2.6.23.1-42)</b> <b>CentOS 5.1 (2.6.18-53)</b> <b>FreeBSD 6.3-RC1</b>

## 4.2 System Driver Installation

**PL-80460 offers the system driver in the setup CD. Please install the driver following the procedures.**



## 4.3 LAN Driver Installation

**PL-80460 offers the LAN driver in the setup CD. Please click the Autorun file and install the driver following the procedures.**

- 1. Insert the setup CD of PL-80460 into your CD-ROM drive.**
- 2. Choose the Drivers file to click the Autorun icon.**
- 3. Follow the procedures to finish the installation.**

## 4.4 Watchdog Timer Programming Guide

### Watchdog timer overview

As systems continually become more complex, the likelihood that a platform will suffer a hard hang, an operating system (OS) software lockup, or an application lockup is also becoming more likely. Watchdog timer can be used to monitor system software operation and take corrective action if the software fails to function after the programmed period. This section describes the operation of the watchdog timer and how to program it.

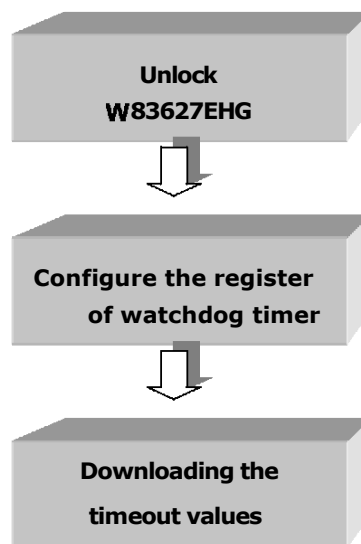
### 1. Programming the Watchdog Timer

The A EWIN PL-80460 provides a watchdog timer that can reset the system or activate LAN bypass function. It provides the following function for user programming:

- Can be enabled and disabled by user's program
- Timer can be set from 1 to 255 seconds or 1 to 255 minutes
- Generates a KBRST# (P60) or activate WDTO# (P77) signal if the software fails to reset the timer when timeout.

### 2. Watchdog Timer Control Register

The I/O port address of the watchdog timer is 2 EH and 2FH, 2 EH is the address port, 2FH is the data port. You must first assign the address of register by writing address value into address port 2 EH, then write/read data to/from the assigned register through data port 2FH





<b>Watchdog Timer Registers</b>		
<b>Address of Register (2EH)</b>	<b>R/W</b>	<b>Value (2FH) and Description</b>
87H		Write this address to I/O address port 2 EH twice to unlock the W83627 EHG
07H	W	Write 08h to point to logical device 8 and select the register of watchdog timer.
30H	R/W	Write 01h to activate WDTO#. Disabled is set as default.
CRF5, Bit 3	R/W	Select WDTO# count mode. 0: Second Mode 1: Minute Mode
CRF5, Bit 1	R/W	Enable / Disable the WDTO# output low pulse to KBRST# 0: Disable 1: Enable
CRF6	R/W	Watchdog time-out value. 0: stop timer [default] 01-FFh: Writing a non-zero value to this register causes the counter to load the value to watchdog counter and start counting down. The amount of the count, in seconds or minutes, depends on the value set in register CRF5, bit 3. This number decides how long the watchdog timer waits for strobe before generating an interrupt or reset signal. Writing a new value to this register can reset the timer to count with the new value
AAH		Write this address to I/O port 2 EH to lock watchdog timer.

## 3. Example program 1

Enable watchdog timer and set 10 seconds as timeout interval and issue KBRST# as the time-out event occur.

```

-----
;
;Enter the extended function mode, interruptible double-write
-----
;
MOV DX,2 EH ; Unlock W83627 EHG
MOV AL,87H
OUT DX,AL
OUT DX,AL
-----
;
; Configure logical device 8
-----
;
MOV AL,07H
OUT DX,AL ; Point to Logical Device Number Reg.
INC DX
MOV AL,08H
OUT DX,AL ; Select logical device 8
-----
;
; Set second as counting unit and KBRST# time-out event
-----
;
DEC DX
MOV AL,F5H
OUT DX,AL ; Select CRF5
INC DX
IN AL,DX
AND AL,F5H ; Set Watchdog time-out to second mode
OR AL,02H
OUT DX,AL ; Enable the WDTO# output low pulse to KBRST#
-----
;
; Load 10 seconds to Watchdog Counter and start counting
down ;
-----
DEC DX
MOV AL,F6H
OUT DX,AL ; Select CRF6
INC DX

```

```

MOV AL,0AH
OUT DX,AL      ; Time-out occurs after 10 seconds
-----
;
; Exit extended function mode
-----
;-
DEC DX
MOV AL,AAH
OUT DX,AL

```

---

#### 4. Example program 2

**Enable watchdog timer and set 2 minutes as timeout interval and set WDTO# signal as the time-out event to control LAN by-pass or activate hardware reset through JP4. Please refer to jumper setting section for more detail information.**

```

-----
;
;Enter the extended function mode, interruptible double-write
-----
;
MOV DX,2 EH ; Unlock W83627 EHG
MOV AL,87H
OUT DX,AL
OUT DX,AL
-----
;
; Configure logical device 8
-----
;
MOV AL,07H
OUT DX,AL      ; Point to Logical Device Number Reg.
INC DX
MOV AL,08H
OUT DX,AL      ; Select logical device 8
-----
;
; Set minute as counting unit
-----
;
DEC DX
MOV AL,F5H
OUT DX,AL      ; Select CRF5

```

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---

```
INC DX
MOV AL,08H
OUT DX,AL ; Set Watchdog time-out to minute mode
-----
;
; Load 2 minutes to Watchdog Counter and start counting down
-----
;
DEC DX
MOV AL,F6H
OUT DX,AL ; Select CRF6
INC DX
MOV AL,02H
OUT DX,AL ; Time-out occurs after 2 minutes
-----
;
; Exit extended function mode
-----
;
DEC DX
MOV AL,AAH
OUT DX,AL
```

---

---

## 4.5 Programming the GPIO

bit            7            6            5            4            3            2            1            0  
 GPIO GPO 7 GPO 6 GPO 5 GPO 4 GPI 3 GPI 2 GPI 1 GPI 0

### Programming of the GPI

0: LOW; 1: HIGH

GPI 3	GPI 2	GPI 1	GPI 0	Data
Bit 3	Bit 2	Bit 1	Bit 0	
0	0	0	0	x0
0	0	0	1	x1
0	0	1	0	x2
0	0	1	1	x3
0	1	0	0	x4
0	1	0	1	x5
0	1	1	0	x6
0	1	1	1	x7
1	0	0	0	x8
1	0	0	1	x9
1	0	1	0	xA
1	0	1	1	xB
1	1	0	0	xC
1	1	0	1	xD
1	1	1	0	x
1	1	1	1	xF

Note: x is the reserved data.

### Programming of the GPO

0: LOW; 1: HIGH

GPO 7	GPO 6	GPO 5	GPO 4	Data
Bit 7	Bit 6	Bit 5	Bit 4	
0	0	0	0	0x
0	0	0	1	1x
0	0	1	0	2x
0	0	1	1	3x

0	1	0	0	4x
0	1	0	1	5x
0	1	1	0	6x
0	1	1	1	7x
1	0	0	0	8x
1	0	0	1	9x
1	0	1	0	Ax
1	0	1	1	Bx
1	1	0	0	Cx
1	1	0	1	Dx
1	1	1	0	Ex
1	1	1	1	Fx

Note: x is the reserved data.

## DOS DEBUG

### Program 1: Initializing the GPIO

```
-0 2 E 87
-0 2 E 87
-0 2 E 29 //configuration register(CR29)
-0 2F 01 //set GPIO ,not GAME PORT
-0 2 E 07 //point to logical device number reg.
-0 2F 09 //select logical device 9
-0 2 E 30 //configuration register(CR30)
-0 2F 01 //open logical device control
-0 2 E F0 //configuration register(CRf0)
-0 2F 0F // 00001111: 0=output; 1=input
```

### Program 2: Programming of the GPI

```
-02EF1
-l 2F // read value (00 - FF)
```

### Program 3: Programming of the GP0

```
-02EF1
-0 2F Xx // X= (0 - F) output value; x=(0 - F) don't care
```



CB-DB9200-00



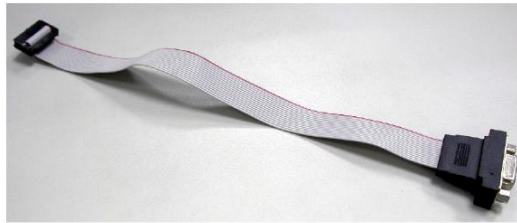
CB-IVGA01-00



CB-RJDB91-00



CB-EC5200-00



CB-C05202/4-00

CB-IPS200-00

CB-IUSB01-00

