

# User's Manual

---



*Custom Embedded Solutions*



**PL-10490**

## Networking Appliance

Desktop Intel® Cedarview D2550/N2600 Network System, 6  
Copper GbE, CF, SATA, PCI-E, Bypass

### User's Manual

Version 1.0a, Sept. 2013

# User's Manual

© Copyright 2013. All Rights Reserved

Manual Edition 1.0a, July, 2013

This document contains proprietary information protected by copyright. All rights are reserved; no part of this manual may be reproduced, copied, translated or transmitted in any form or by any means without prior written permission of the manufacturer.

The content of this document is intended to be accurate and reliable; the original manufacturer assumes no responsibility for any inaccuracies that may be contained in this manual. The original manufacturer reserves the right to make improvements to the products described in this manual at any time without prior notice.

## Trademarks

IBM, EGA, VGA, XT/AT, OS/2 and PS/2 are registered trademarks of International business Machine Corporation

Award is a trademark of Award Software International, Inc

Intel is a trademark of Intel

RTL is a trademark of Realtek

VIA is a trademark of VIA Technologies, Inc

Microsoft, Windows, Windows NT and MS-DOS are either trademarks or registered trademarks of Microsoft Corporation

All other product names mentioned herein are used for identification purpose only and may be trademarks and/or registered trademarks of their respective companies

## Limitation of Liability

While reasonable efforts have been made to ensure the accuracy of this document, the manufacturer and distributor assume no liability resulting from errors or omissions in this document, or from the use of the information contained herein.

For more information on PL-10490 or other WIN ENTERPRISES products, please visit our website <http://www.win-ent.com>.

For technical support send inquiries to: [sales@win-ent.com](mailto:sales@win-ent.com).

## Table of Contents

Chapter 1. General Information .....	4
1.1 Introduction .....	4
1.3 Ordering Information .....	6
1.4 Packaging .....	6
1.5 Precautions .....	7
1.6 System Layout .....	8
1.7 Board Dimensions .....	9
Chapter 2. Connector/Jumper Configuration .....	10
2.1 Connector/Jumper Location and Definition .....	10
2.2 Connector and Jumper Setting .....	12
2.3 CompactFlash™ Card Socket Pin Definitions .....	22
Chapter 3. Utility & Driver Installation .....	23
3.1 Operations System Support .....	23
3.2 System Driver Installation .....	24
3.3 LAN Driver Installation .....	24
Appendix C: System Resources .....	25
Appendix D: Cable Development Kit .....	28

## Chapter 1. General Information

### 1.1 Introducing

The PL-10490 is a desktop hardware platform designed for network service applications. Built with Intel® Embedded IA components with warranty of long product life, the PL-10490 supports Intel® Atom™ D2550, N2600 low-voltage processor with Intel® ICH10R I/O controller.

The platform supports high bandwidth DDR3 SODIMM slot with memory up to 4GB. In order to provide the best network performance and best utilization, the powerful storage interfaces include one 2.5" SATA HDD and CompactFlash™. PL-10490 supports six copper GbE with bypass function on front-panel. The front panel also has two USB 2.0 ports, one RJ-45 console port and LED indicators to monitor power and storage device activities for local system management, maintenance and diagnostics. In addition, the PL-10490 supports one mini-card socket. The device is RoHS, FCC and CE compliant.

# User's Manual

## 1.2 Specifications

Processor System	CPU	Intel® Cedarview-D D2550, N2600 Processors
	Chipset	Intel® ICH10R
	BIOS	AMI® BIOS
Memory	Technology	Un-buffered and Non-ECC DDR3 800/1066MHz memory
	Capacity	Up to 4GB with one SO-DIMM socket
Expansion	Expansion Slots	One mini-card slot (Support USB bus only via mini-PCIe slot) (Option)
Ethernet	GbE Ethernet	Six RJ45 GbE ports, Intel® 82583V, PCI-E x1 (one pair bypass between LAN1 and LAN2)
	LAN bypass	One ports bypass (Optional)
Storage	SATA HDD	One internal 2.5" SATA HDD bay
	Compact Flash Socket	One CompactFlash™ Type II
I/O	USB	Two external USB2.0
	Serial	One RJ45 Console port (COM1) One internal 5x2 pin header (COM2)
Power Supply	Watt	60W power supply, AC to DC 12V
Mechanical and Environment	Form Factor	Desktop
	LED	1 x Power LED (Green) 1 x HDD LED (Red) 1 x Bypass LED (Yellow) 6 pairs LEDs for 6 Ethernet ports Active/Link status (Green)
	Dimensions ( W x D x H )	232mm (W) x 153mm (D) x 44mm (H) (9.1W x 6" D x 1.7" H)
	Operating Temperature	Operating: 0 ~ 40°C ( 32 ~ 104°F )
	Storage Temperature	-20 ~ 75°C (-4 ~ 167°F)
	Humidity	10 ~ 85% relative humidity, non-operating, non-condensing
Weight	1pc/Box, 4kgs, 14cm(W) x 38cm(D) x 23.2cm(H) 5Boxes/CTN, 20kgs, 40cm(W) x 72.4cm(D) x 26.4cm(H)	
Certifications	RoHS, CE, FCC	

## 1.3 Order Information

We offer some accessories for PL-10490 appliance for customer need.

PL-1049A	Desktop Intel® ATOM D2550 Network System, DDR3, 6 RJ45 GbE, SATA, CF, and Bypass
PL-1049B	Desktop Intel® ATOM D2550 Network System, DDR3, 4 RJ45 GbE, SATA, CF, and PCI-E
DK001	Cable development kit CB-CO5204-00 Cross over cable CB-EC5200-00 Ethernet cable CB-RJDB91-00 RJ45 Console cable CB-DB9200-01 Null modem cable CB-IVGA01-00 VGA cable CB-IPS200-00 KB/MS cable CB-IUSB01-00 USB cable

## 1.4 Packaging

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

1. PL-10490 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 of the above items is missing or damaged contact your dealer or retailer from whom you purchased the PL-10490. Consider keeping the box and carton for storage or shipping. After you unpack the goods, inspect and make sure the packaging and contents are intact. Do not plug in the power adapter to if unit appears damaged.

*Note: Keep the PL-10490 in the original packaging until you start installation.*

## 1.5 Precautions

Please make sure you properly ground yourself before handling the PL-10490 appliance or other system components. Electrostatic discharge can be easily damage the PL-10490 appliance.

Do not remove the anti-static packing until you are ready to install the PL-10490 appliance.

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

Handle the PL-10490 appliance carefully and avoid touching the internal components.

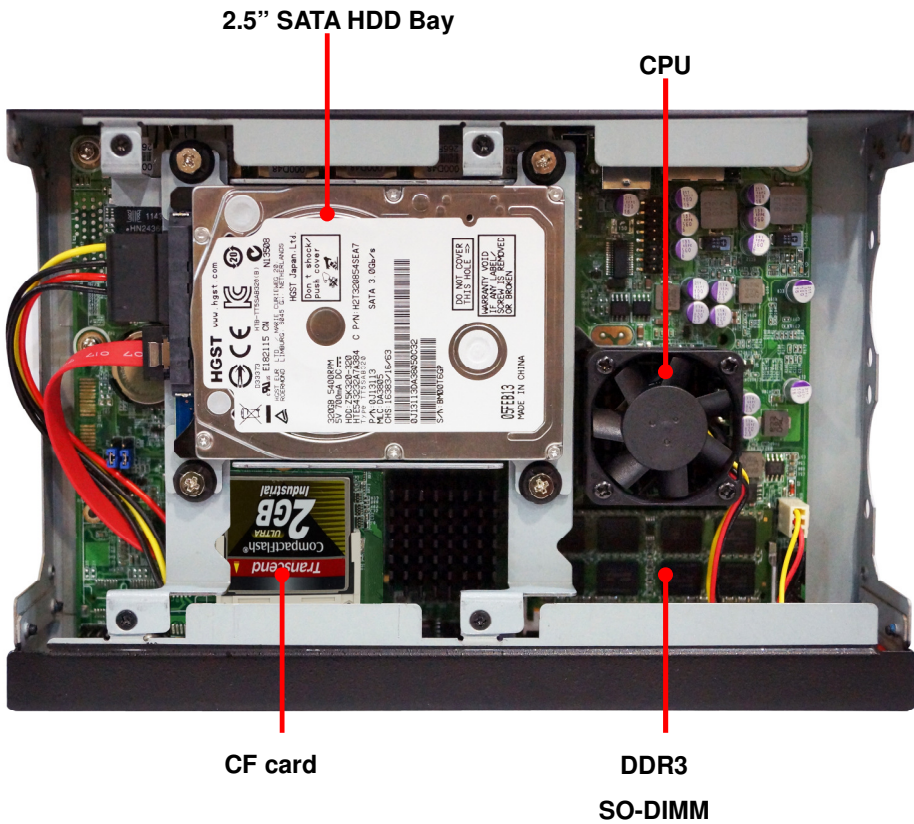
# User's Manual

## 1.6 System Layout

PL-10490 Front Side

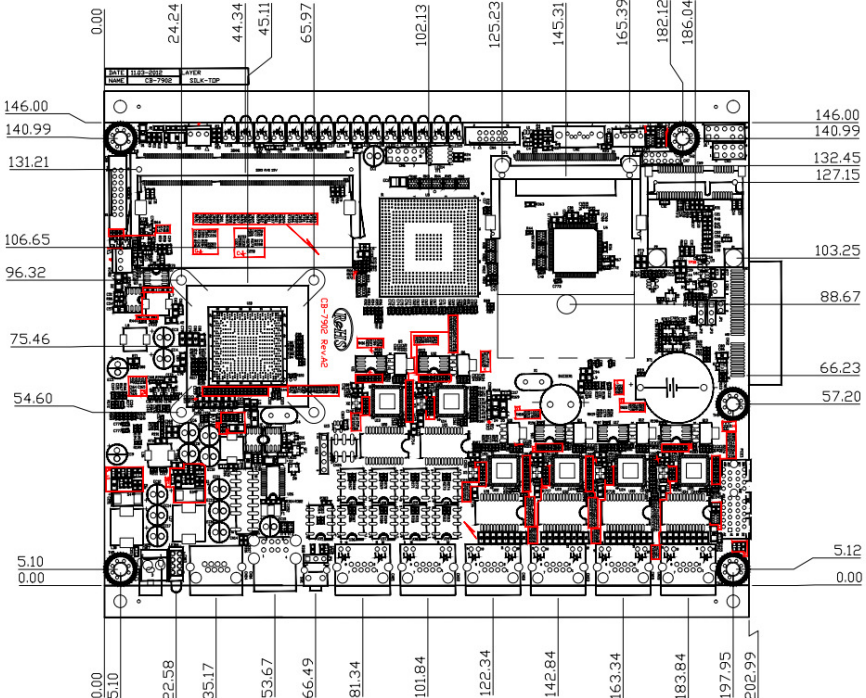


PL-10490 Rear Side



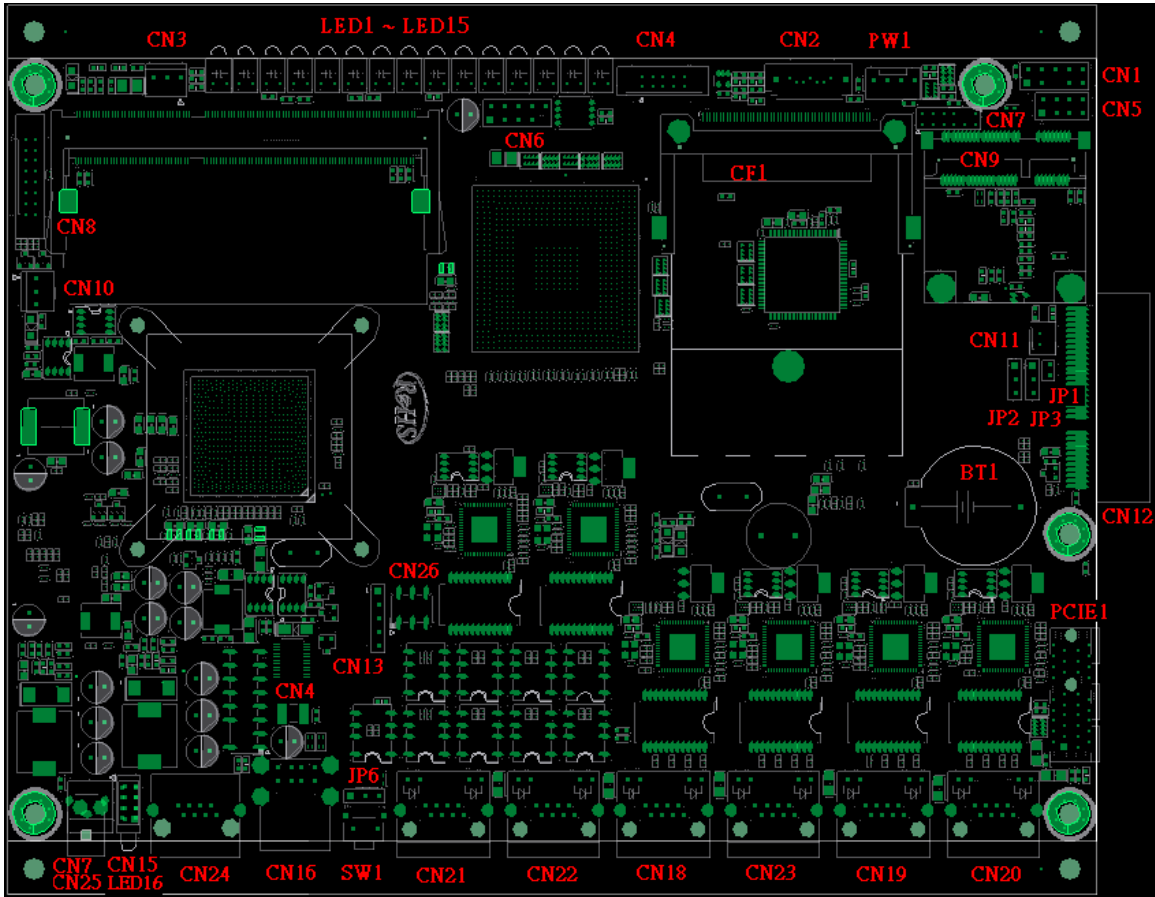


## 1.7 Board Dimensions



## Chapter 2. Connector/Jumper Configuration

### 2.1 Connector/Jumper Locations and Definitions



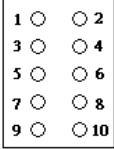
## User's Manual

*PL-10490 Connectors and Jumpers:*


<b>Connector</b>	<b>Description</b>	<b>Connector</b>	<b>Description</b>
CN1	KB/MS Connector	CN25	Power JACK +12V Connector
CN2	SATA Connector	CN26	Watchdog/Bypass selection
CN3	System FAN Connector	PCIE1	PCI-E x1 Slot
CN4	COM2 Connector	PW1	SATA Power Connector
CN5	SPI Connector	JP1	PCI-E slot +5V voltage selection
CN6	USB 2X5 Header (2.54mm)	JP2	PCI-E x1/x2 selection
CN7	Port 80 Connector	JP3	Clear CMOS
CN8	VGA Connector	JP6	GPI/Reset selection
CN9	Mini-PCIE Slot	LED1	Power LED
CN10	CPU FAN Connector	LED2	By Pass LED
CN11	WLAN LED Connector	LED3	HDD LED
CN12	PCI-E x4 Slot	LED4	LAN1 Active LED
CN13	Key Pad Connector	LED5	LAN1 Link LED
CN14	LCM Connector	LED6	LAN2 Active LED
CN15	LED Connector	LED7	LAN2 Link LED
CN16	USB Connector	LED8	LAN3 Active LED
CN17	2-Pin Power Connector	LED9	LAN3 Link LED
CN18	LAN3 Connector	LED10	LAN4 Active LED
CN19	LAN5 Connector	LED11	LAN4 Link LED
CN20	LAN6 Connector	LED12	LAN5 Active LED
CN21	LAN1 Connector	LED13	LAN5 Link LED
CN22	LAN2 Connector	LED14	LAN6 Active LED
CN23	LAN4 Connector	LED15	LAN6 Link LED
CN24	Console Port (RJ45)	LED16	Rear Side LED

## 2.2 Connector and Jumper Setting

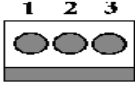
### CN1: PS/2 KB/MS Pin Header

			
Pin	Define	Pin	Define
1	KCLK	2	MCLK
3	KDAT	4	MDAT
5	N/A	6	N/A
7	PS2_GND	8	PS2_GND
9	PS2_VCC	10	PS2_VCC

### CN2: SATA Connector

	Pin	Signal
	1	Ground
	2	TXP
	3	TXN
	4	Ground
	5	RXN
	6	RXP
	7	Ground

### CN3: System FAN

	
Pin	Define
1	Ground
2	+12V
3	Speed Detect

# User's Manual

## CN4: COM2 pin header

Pin	Define	Pin	Define
1	DCD#	6	DSR#
2	RXD#	7	RTS#
3	TXD#	8	CTS#
4	DTR#	9	RI#2
5	Ground	10	NC

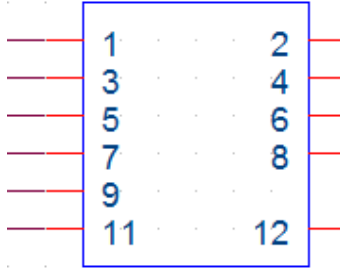
## CN5: SPI Pin Header

Pin	Define	Pin	Define
1	+3.3V	2	Ground
3	CS#	4	SCLK
5	MISO	6	MOSI
7	NONE	8	IO

## CN6: USB Pin Header

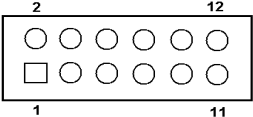
Pin	Define	Pin	Define
1	+5V	2	+5V
3	USB1N	4	USB2N-
5	USB1P	6	USB2P
7	Ground	8	Ground
9	N/A	10	Ground

## CN7: Port 80 Connector



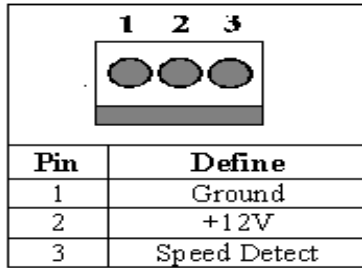
Pin	Define	Pin	Define
1	+3.3V	2	LAD0
3	LAD1	4	LAD2
5	LAD3	6	LFRAME_N
7	PLTRST_N	8	+5V
9	PORT80_PCLK	10	N/A
11	GND	12	GND

## CN8: VGA pin header

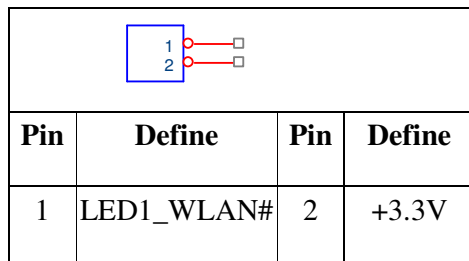


Pin	Define	Pin	Define
1	RED	2	GREEN
3	BLUE	4	Reserved
5	GND	6	RED RTN
7	GREEN RTN	8	BLUE RTN
9	+5V	10	GND
11	Reserved	12	SDA
13	HSYNC	14	VSYNC
15	SCL	16	Reserved

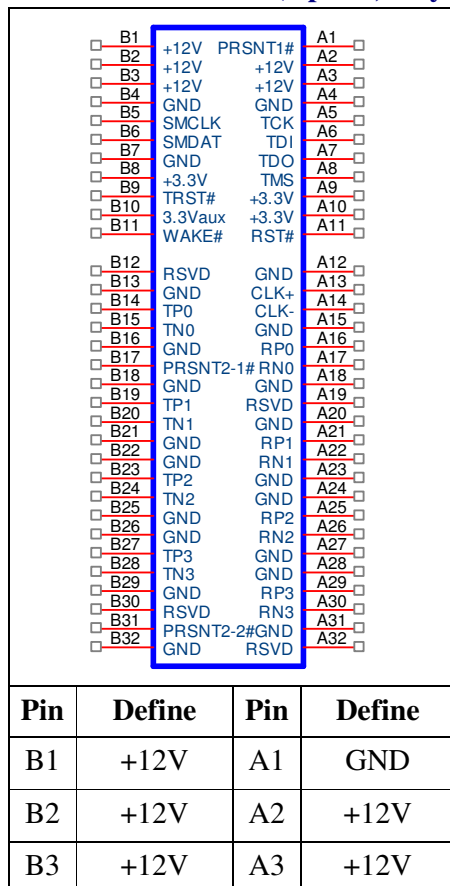
## CN10: CPU FAN



## CN11: WLAN LED Connector



## CN12: PCIE x4 Slot (Option, only support PCI-E x1/x2)

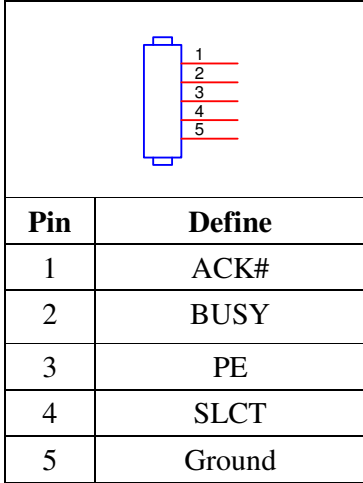


## User's Manual

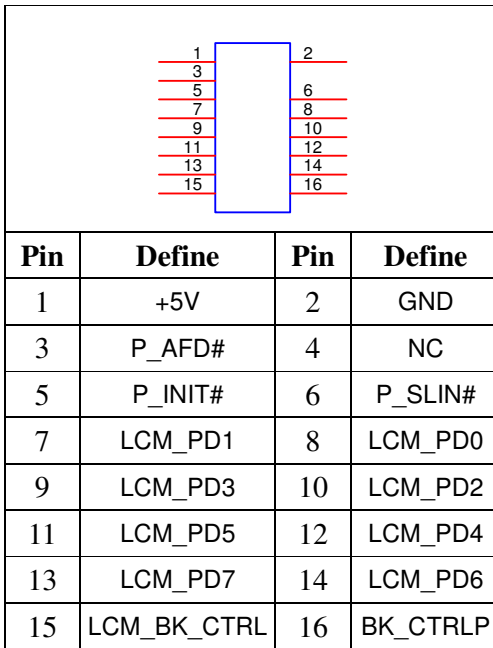
B4	GND	A4	GND
B5	SMBCLK	A5	+3.3V
B6	SMBDAT	A6	+3.3V
B7	GND	A7	TEST
B8	+3.3V	A8	+3.3V
B9	NC	A9	+3.3V
B10	+3.3V	A10	+3.3V
B11	NC	A11	PLTRST
B12	PWROK	A12	GND
B13	GND	A13	PCIECLKP
B14	TXP5	A14	PCIECLKN
B15	TXN5	A15	GND
B16	GND	A16	RXP5
B17	SLOT_+5V	A17	RXN5
B18	GND	A18	GND
B19	TXP6	A19	SLOT_+5V
B20	TXN6	A20	GND
B21	GND	A21	RXP6
B22	GND	A22	RXN6
B23	NC	A23	GND
B24	NC	A24	GND
B25	GND	A25	NC
B26	GND	A26	NC
B27	NC	A27	GND
B28	NC	A28	GND
B29	GND	A29	NC
B30	NC	A30	NC
B31	PCIESEL	A31	GND
B32	GND	A32	NC



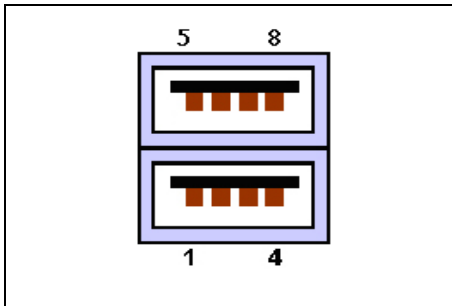
## CN13: LCM KEYPAD Pin Header



## CN14: LCM pin header



## CN16: USB Connector




# User's Manual

Pin	Define	Pin	Define
1	+5V	2	DATA0-
3	DATA0+	4	GND
5	+5V	6	DATA1-
7	DATA1+	8	GND

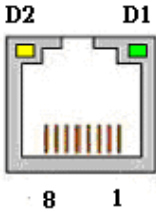
## CN17: DC +12V Power Jack (2Pin) (Option, Only for SCB-7902)

Pin	Define	Pin	Define
1	+12V	2	GND




## CN18/CN19/CN20/CN21/CN22/CN23: LAN RJ-45 Connector

Pin	Define
1	TX+
2	TX-
3	RX+
4	Chassis Ground
5	Chassis Ground
6	RX-
7	Chassis Ground
8	Chassis Ground
D1: Speed indicated LED	
1 Gbps	GREEN
100 Mbps	YELLOW
D2 :Link/Activity LED	
Link	GREEN
Activity	BLINKING



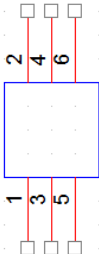
# User's Manual

## CN25: DC +12V Power Jack (2Pin)



Pin	Define	Pin	Define
1	+12V	2	GND

## CN26: Watchdog/Bypass selection



Pin	Status	Pin	Status
1-3	Watchdog mode(default)	2-4	By Pass Enable
3-5	By pass mode	4-6	By Pass Disable(default)

## PCIE1: PCIe x1 SLOT

□ B1	12V(P)	○ PRSNT1*(B)	○ A1	□
□ B2	12V(P)	12V(P)	○ A2	□
□ B3	12V(P)	12V(P)	○ A3	□
□ B4	GND(P)	GND(P)	○ A4	□
□ B5	SMCLK(B)	JTAG2(B)	○ A5	□
□ B6	SMDAT(B)	JTAG3(B)	○ A6	□
□ B7	GND(P)	JTAG4(B)	○ A7	□
□ B8	3.3V(P)	JTAG5(B)	○ A8	□
□ B9	JTAG1(B)	3.3V(P)	○ A9	□
□ B10	3.3VAUX(I)	3.3V(P)	○ A10	□
□ B11	WAKE*(B)	PWRGD(I)	○ A11	□
KEY				
□ B12	RSVD(B)	GND(P)	○ A12	□
□ B13	GND(P)	REFCLK+(I)	○ A13	□
□ B14	HSOP0(I)	REFCLK-(I)	○ A14	□
□ B15	HSOP0(I)	GND(P)	○ A15	□
□ B16	GND(P)	HSIP0(O)	○ A16	□
□ B17	PRSNT2*(B)	HSIN0(O)	○ A17	□
□ B18	GND(P)	GND(P)	○ A18	□

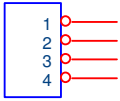
  

Pin	Define	Pin	Define
B1	+12V	A1	GND
B2	+12V	A2	+12V
B3	+12V	A3	+12V

# User's Manual

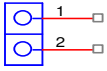
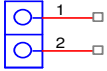
B4	GND	A4	GND
B5	SMBCLK	A5	TCK
B6	SMBDAT	A6	TDI
B7	GND	A7	NC
B8	+3.3V	A8	TMS
B9	TRST#	A9	+3.3V
B10	+3.3V	A10	+3.3V
B11	NC	A11	PLTRST
B12	PWROK	A12	GND
B13	GND	A13	SLOTCLKP
B14	SLOTTXP	A14	SLOTCLKN
B15	SLOTTXN	A15	GND
B16	GND	A16	SLOTTRXP
B17	NC	A17	SLOTTRXN
B18	GND	A18	GND

## PW1: HDD POWER



	
Pin	Define
1	+12V
2	GND
3	GND
4	+5V

## Jumper Settings



### JP1: PCI-E slot +5V voltage selection

Pin		Setting
	CLOSE	+5V
	OPEN	0V


### JP2: PCI-E x1/x2 selection

Pin		PCI-E Slot
	1-2	PCI-E x1
	2-3	PCI-E x2


### JP3: Clear CMOS

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

### JP6: GPI/Reset selection

Pin		Setting
	1-2	GPI

# User's Manual

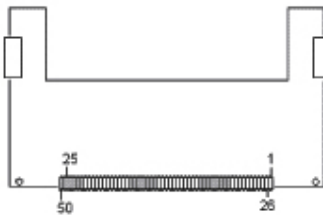
	2-3	RESET
---	-----	-------

## 2.3 CompactFlash™ Card Socket Pin Definitions

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

CompactFlash™ storage products are solid state form factors, meaning they contain no moving parts. Thus, they provide users with much greater data protection than conventional magnetic disk devices.

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	39	SCSE	49	D10
10	Ground	20	A00	30	D14	40	NC	50	Ground



## Chapter 3. Utility & Driver Installation

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

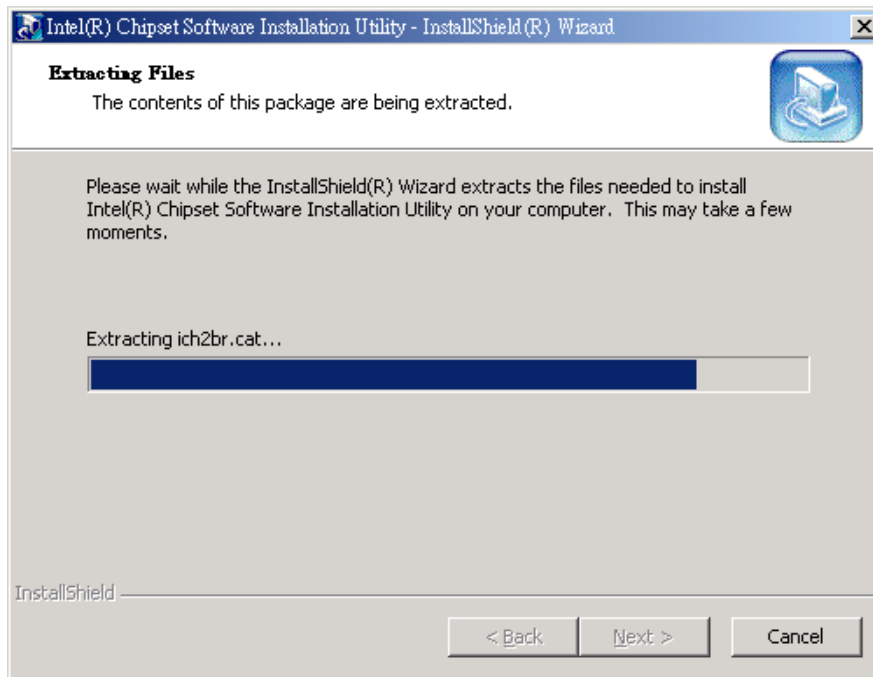
### 3.1 Operation System Support

PL-10490 can support Windows® and Linux® operation system as follows. Before installation check your OS version. If your OS is not in the following list upgrade your OS version.

OS	Version
DOS	DOS 6.22
Windows®	Windows® XP Professional SP2 Windows® XP Professional SP3
Linux®	Fedora 5 Fedora 6 Fedora 7 Fedora 8 Fedora 9 Fedora 10

## 3.2 System Driver Installation

PL-10490 offers the system driver in the setup CD. Please install the driver using the following procedures.



## 3.3 LAN Driver Installation

PL-10490 provides the LAN driver on the setup CD. Please click the Autorun file and install the driver using the following procedure.

1. Insert the setup CD of PL-10490 into your CD-ROM drive.
2. Choose the Drivers file to click the Autorun icon.
3. Follow the procedures to finish the installation.



## Appendix C: System Resources

### Interrupt Controller:

The PL-10490 is a fully PC compatible appliance. If you would like to use extra add-on cards make sure that the IRQs do not conflict.

Any of the following IRQs may be assigned to the PCI Bus. You are able to use Microsoft's Diagnostic (MDS.EXE) utility included in Windows directory to see their map.

IRQ	Assignment
IRQ0	Timer
IRQ1	Free
IRQ2	Free
IRQ3	Free
IRQ4	Free
IRQ5	Free
IRQ6	Free
IRQ7	PCI-PCI Bridge
IRQ8	Free
IRQ9	Free
IRQ10	PCI-PCI Bridge
IRQ11	VGA Adapter
IRQ12	Free
IRQ13	Free
IRQ14	Free
IRQ15	Free

### DMA Channel Assignment:

Channel	Assignment
DMA0	Free
DMA1	Free
DMA2	Free
DMA3	Free
DMA4	Free
DMA5	Free
DMA6	Free

# User's Manual

DMA7	Free
------	------

## Memory Map:

The following table indicates memory of PL-10490. The address ranges specify the runtime code length.

### Memory below 1MB (1MB ~ 640KB)

Address Range	Type	Owner
A0000 ~ AFFFF	ISA	VGA Adapter
B0000 ~ BFFFF	ISA	VGA Adapter
C0000 ~ CF3FF	ISA	VGA Adapter

### Memory above 1MB (1MB ~ 65535KB)

Address Range	Type	Owner
FE400000~FE4FFFFFF	PCI	VGA Adapter
FE500000~FE4FFFFFF	PCI	PCI-PCI Bridge
FE600000~FE6FFFFFF	PCI	PCI-PCI Bridge
FE700000~FE7FFFFFF	PCI	PCI-PCI Bridge
FE800000~FE8FFFFFF	PCI	PCI-PCI Bridge
FE900000~FE9FFFFFF	PCI	PCI-PCI Bridge
FEA00000~FEAFFFFFF	PCI	PCI-PCI Bridge

## User's Manual

---

### I/O Map:

The addresses shown in the table are typical locations

<b>I/O Port</b>	<b>Assignment</b>
3B0 ~ 3BB	VGA Adapter
3C0 ~ 3DF	VGA Adapter
9000 ~ 9FFF	PCI-PCI Bridge
A000 ~ AFFF	PCI-PCI Bridge
B000 ~ BFFF	PCI-PCI Bridge
C000 ~ CFFF	PCI-PCI Bridge
D000 ~ DFFF	PCI-PCI Bridge
E000 ~ EFFF	PCI-PCI Bridge
F000 ~ F01E	PCI-PCI Bridge
F020 ~ F03E	USB Controller
F040 ~ F05E	USB Controller
F060 ~ F07E	USB Controller
F140 ~ F146	VGA Adapter

# User's Manual

## Appendix D: Cable Development Kit

The PL-10490 offers some cables for development use.

### DK001

Item & Description	Part No.	Qty
Ethernet Cat.5 Cable 2M/ RoHS	CB-EC5200-00	1
Cross Over 2M Color/ RoHS	CB-CO5202/4-00	1
RJ45 to DB9 2M Cable/ RoHS	CB-RJDB91-00	1
2m null modem cable/ RoHS	CB-DB9200-01	1
VGA CABLE (2mm) 15CM/ RoHS	CB-IVGA01-00	1
KB/MS CABLE 15CM/ RoHS	CB-IPS200-00	1
USB CABLE/ RoHS	CB-IUSB01-00	1

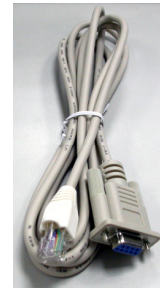
CB-EC5200-00



CB-CO5202/4-00



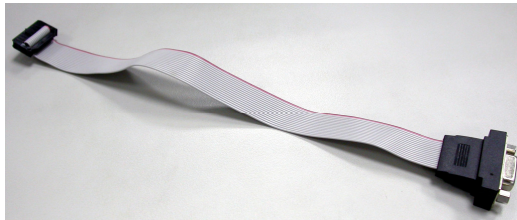
CB-RJDB91-00



CB-DB9200-00



CB-IVGA01-00



CB-IPS200-00



CB-IUSB01-00

