



# **ICOP-6083 Series**

# **ICOP-6084 Series**

**Tiny Vortex86 I/O Modules**  
**Single LAN/DUAL LAN/Mini-PCI**  
**Audio-Video/Audio/Video**

## **User's Manual**

**(Revision1.0)**

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● Revision date: None

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# Chapter 0

## Startup

### 0.1 Packing List

Type Number	Function Description
ICOP-6083L1	X-PCI Single LAN I/O Module
ICOP-6083L2	X-PCI Dual LAN I/O Module
ICOP-6083-Mini-PCI	X-PCI Mini-PCI Module
ICOP-6084AV	X-PCI Video Captured Audio I/O Module
ICOP-6084A	X-PCI Audio I/O Module
ICOP-6084V	X-PCI Video Captured I/O Module, 3-channels

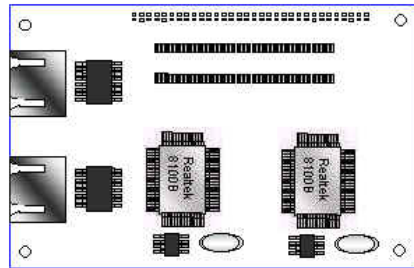
Note: The packaging of the above listed product does not contain cable accessories.

### 0.2 I/O Function Table

I/O INTERFACE	ICOP-6083L1	ICOP-6083L2	ICOP-6083-Mini-PCI	ICOP-6084AV	ICOP-6084A	ICOP-6084V
Specific X-PCI Interface	√	√	√	√	√	√
Ethernet LAN	1	2				
Mini-PCI			√			
Video Captured				√		√
Audio				√	√	

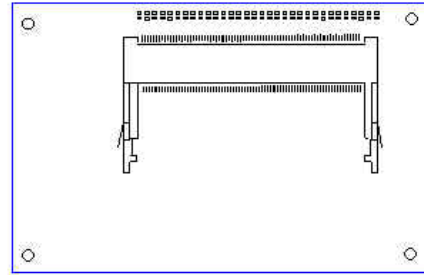
## 0.3 Types of X-PCI I/O Expansion Modules

### 0.3.1 ICOP-6083 Series



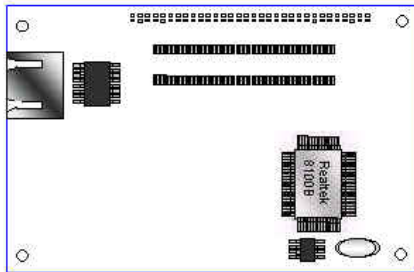
designed by ICOP

**ICOP-6083L2**



designed by ICOP

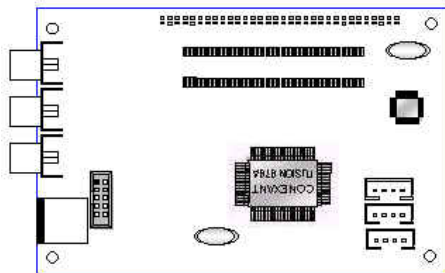
**ICOP-6083-Mini-PCI**



designed by ICOP

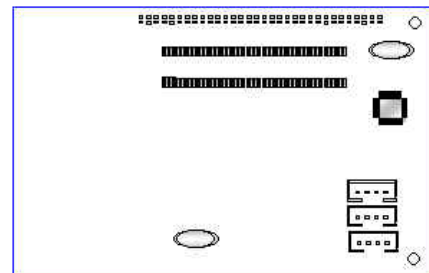
**ICOP-6083L1**

### 0.3.2 ICOP-6084 Series



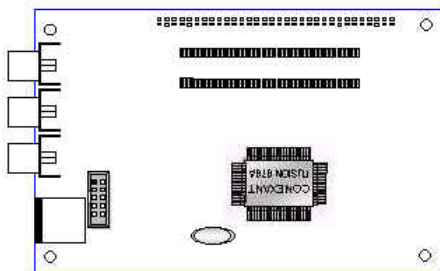
designed by ICOP

**ICOP-6084AV**



designed by ICOP

**ICOP-6084A**



designed by ICOP

**ICOP-6084V**

## 0.4 Connectors Definition

<b>Bus Interface</b>	Specific X-PCI Bus Interface
<b>Extended I/O Interface</b>	<ul style="list-style-type: none"> <li>● Predefined Specific X-PCI bus I/O interface x1</li> <li>● PCI-bus interface x1</li> <li>● Ethernet LAN interface, 10/100Base-T x1~2</li> <li>● Video Captured interface x1</li> <li>● AC 97 compliant Audio x1s et</li> </ul>
<b>Connectors</b>	<ul style="list-style-type: none"> <li>● 2.0mm Ø, 32x2 pin Pin Header for X-PCI 32-bit Interface x1</li> <li>● 2.0mm Ø 124-pin Pin Header for Mini-PCI Connector x1</li> <li>● 2.0mm Ø 12-pin Pin RJ45 for 10/100BaseT x1 or x2</li> <li>● External 4-pin Mini-DIN S-connector for Video Captured</li> <li>● 2.0mm Ø 10-pin Pin Header for VIDEO-IN1/VIDEO-IN2/VIDEO-IN3 x3 sets</li> <li>● 4-pin box header for LINE-INx1/LINE-OUTx1/MIC-INx1 x3 sets</li> </ul>
<b>LAN</b>	<ul style="list-style-type: none"> <li>● Realtek 8100B single chip x1</li> <li>● Full-duplex transfer mode, doubles effective bandwidth</li> <li>● NE2000 compatible with built-in 16KB RAM buffer</li> <li>● Throughput 10/100Mbps</li> </ul>
<b>Video Captured</b>	<ul style="list-style-type: none"> <li>● Conexant Fusion 878A – 4-channel video-in</li> </ul>
<b>Audio</b>	<ul style="list-style-type: none"> <li>● Full compliant with AC97 CODEC v2.1</li> <li>● Internal MIC-in, Line-in and Line-out interface</li> </ul>
<b>Power Req'ment</b>	Single Voltage +5V @0.25A
<b>Board Weight</b>	125g
<b>Board Size</b>	100mm X 66mm (3.93 x 2.59 inches)
<b>Operating Temp.</b>	-20°C ~ +70°C

## 0.5 Ordering Information

### ● X-PCI I/O Expansion Modules

Type Number	Function Description
ICOP-6083L1	X-PCI Single LAN I/O Module
ICOP-6083L2	X-PCI Dual LAN I/O Module
ICOP-6083-Mini-PCI	X-PCI Mini-PCI Module
ICOP-6084AV	X-PCI Video Captured Audio I/O Module
ICOP-6084A	X-PCI Audio I/O Module
ICOP-6084V	X-PCI Video Captured I/O Module, 3-channels

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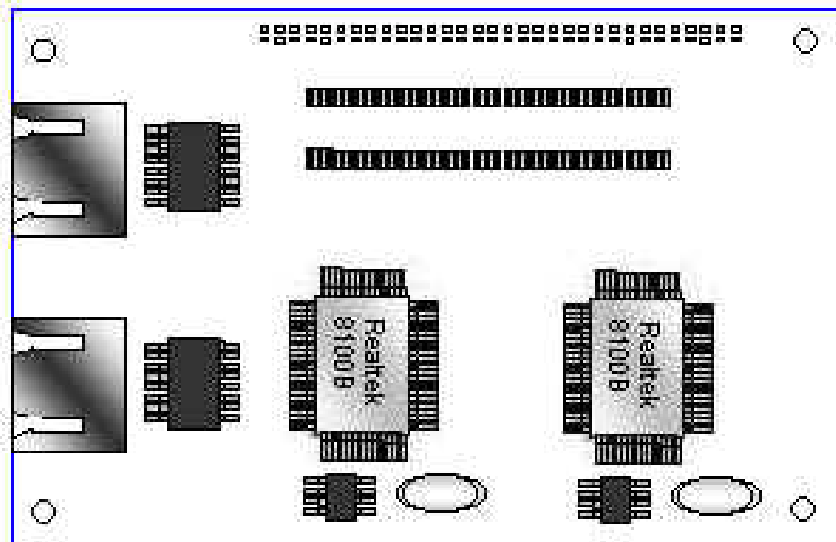
# Chapter 1

## Introduction

### 1.1 Board Outline – ICOP-6083 Series

#### ■ ICOP-6083L2

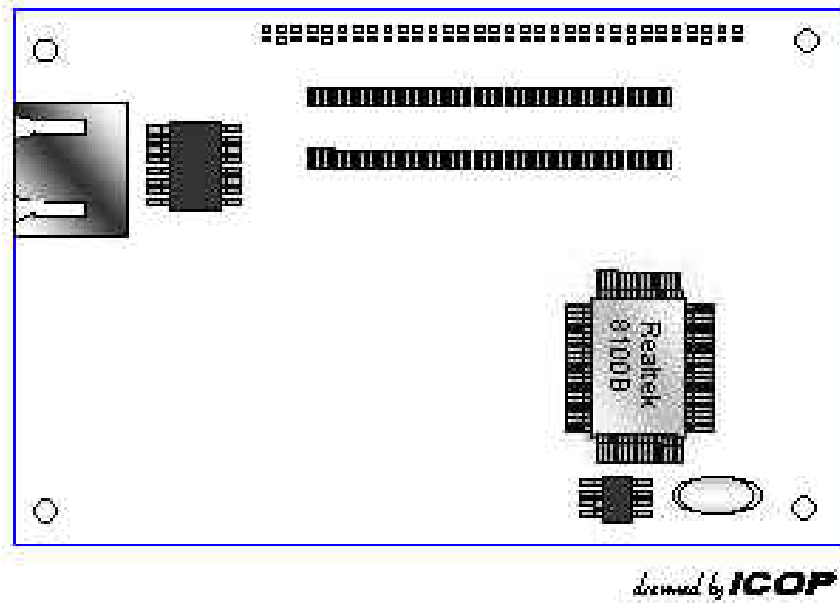
(Tiny Vortex86 Dual LAN I/O Module)



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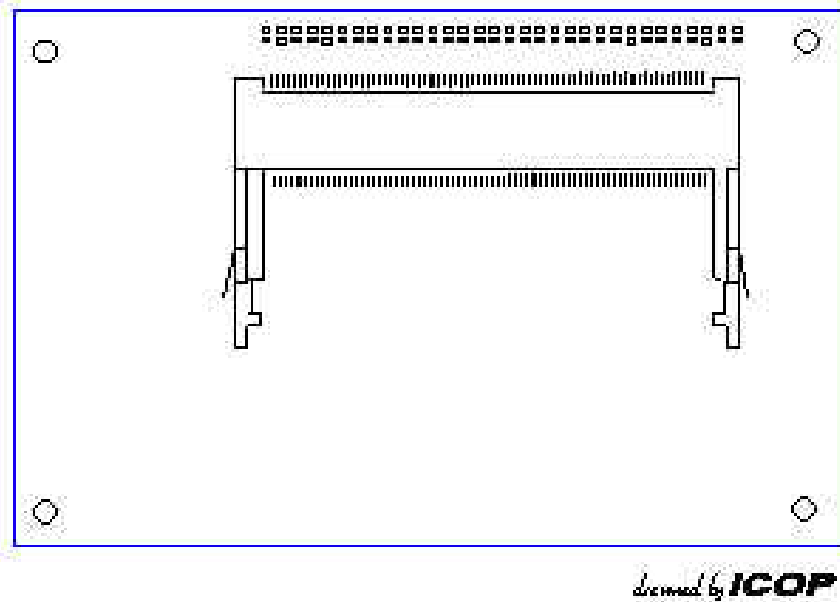
■ **ICOP-6083L1**

**(Tiny Vortex86 Single LAN I/O Module)**



■ **ICOP-6083-Mini-PCI**

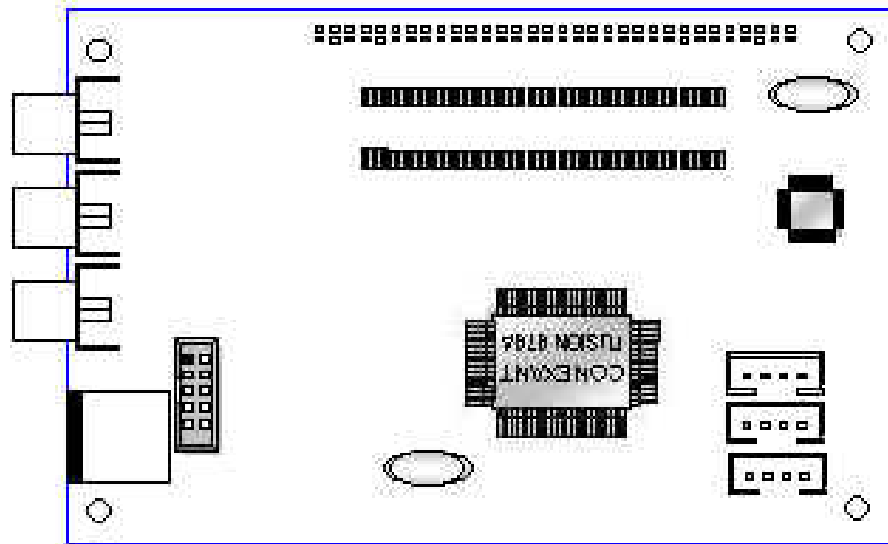
**(Tiny Vortex86 Mini-PCI I/O Module)**



## 1.2 Board Outline – ICOP-6084 Series

### ■ ICOP-6084AV

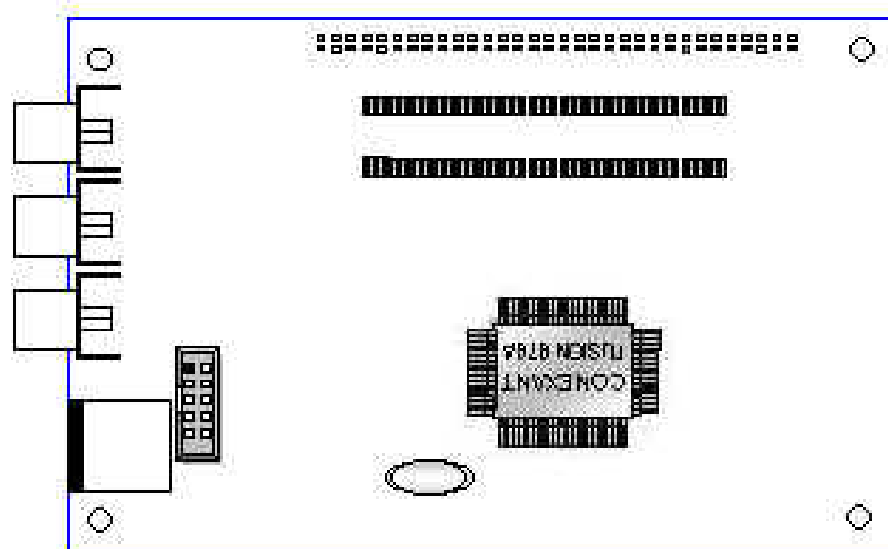
(Tiny Vortex86 Audio Video-IN I/O Module)



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### ■ ICOP-6084V

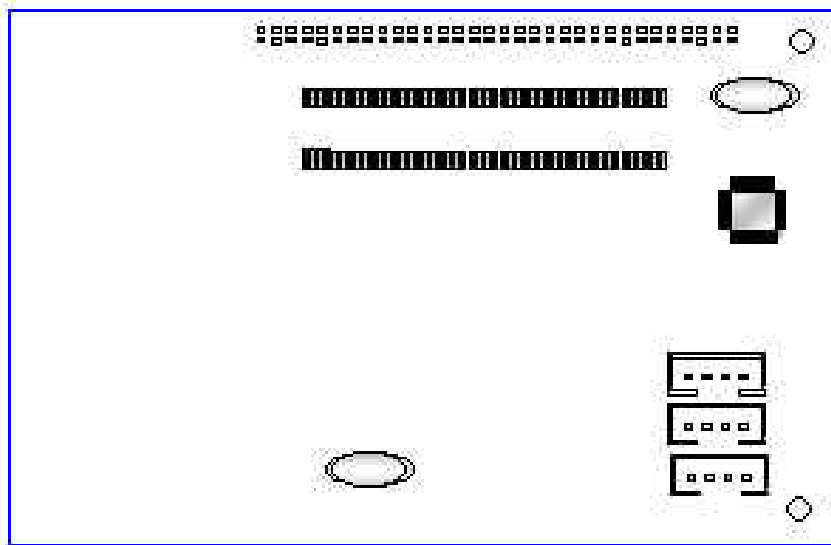
(Tiny Vortex86 Video-IN I/O Module)



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## ■ ICOP-6084A

### (Tiny Vortex86 Audio I/O Module)

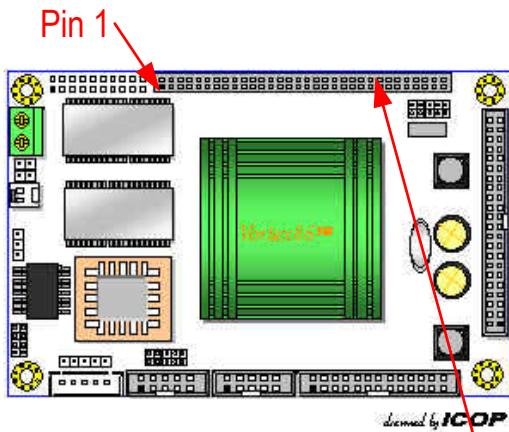


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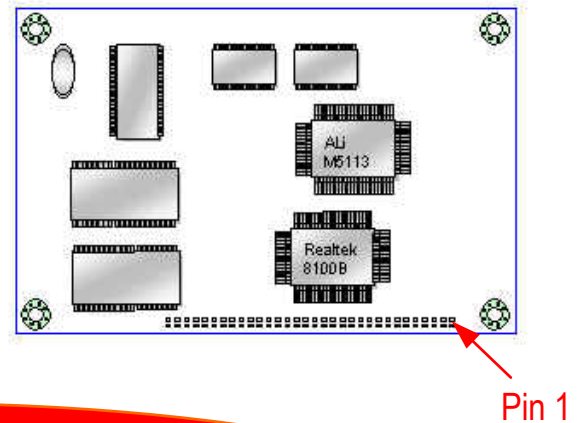
## 1.3 Board Outline – ICOP-6082

### ■ ICOP-6082 – X-PCI Bus Interface connector

**Component Side**



**Reverse Solder Side**

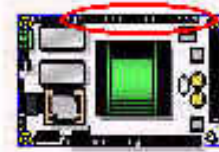


**Warning :** Be sure that you have the right orientation when adding Tiny I/O modules into the X-PCI bus of the ICOP-6082 (Tiny Vortex86™ CPU module). The available Tiny I/O modules include BT-878 Video Capture and 2-LAN I/O modules. The Manufacturer is not liable for any damage caused by wrong orientation.

## 1.4 X-PCI Bus Pin Assignment

J1: X-PCI-2.0 32x2-Box Header

Pin #	Signal Name	Pin #	Signal Name
1	GND	2	GND
3	AD0	4	AD1
5	AD2	6	AD3
7	AD4	8	AD5
9	AD6	10	AD7
11	AD8	12	AD9
13	AD10	14	AD11
15	AD12	16	AD13
17	AD14	18	AD15
19	VCC	20	VCC
21	AD16	22	AD17
23	AD18	24	AD19
25	AD20	26	AD21
27	AD22	28	AD23
29	AD24	30	AD25
31	AD26	32	AD27
33	AD28	34	AD29
35	AD30	36	AD31
37	VCC3	38	VCC3
39	CBE-0	40	CBE-1
41	CBE-2	42	CBE-3
43	PGNT-0	44	PREQ-0
45	PGNT-1	46	PREQ-1
47	PGNT-2	48	PREQ-2
49	INT-A	50	INT-B
51	INT-C	52	INT-D
53	GND	54	GND
55	FRAME-	56	IRDY-
57	TRDY-	58	STOP-
59	SERR-	60	PAR
61	DEVSEL-	62	PLOCK-
63	PCIRST-	64	PCICLK1



# Chapter 2

## Connectors Definition

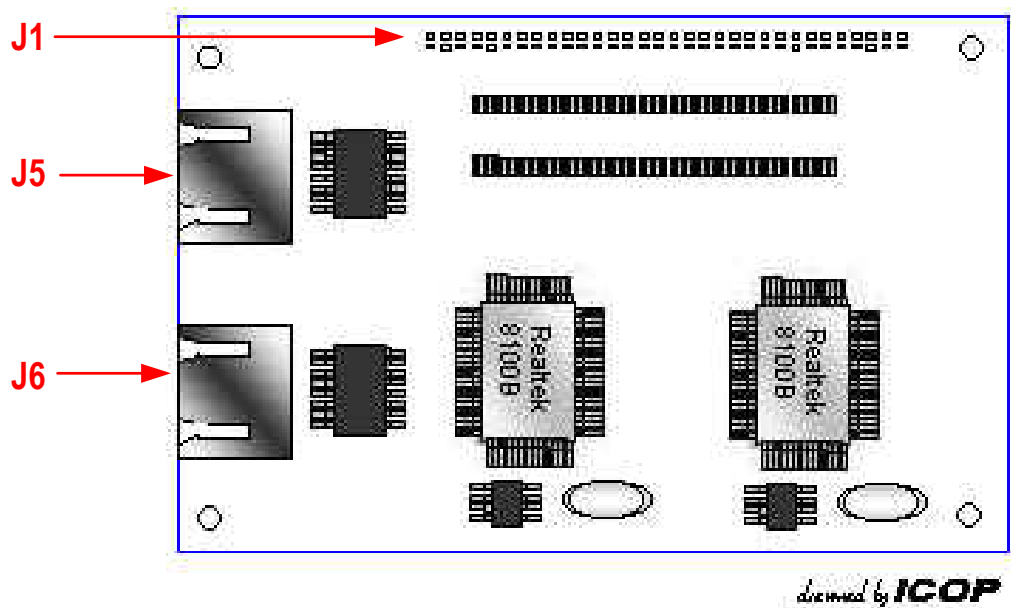
### 2.1 ICOP-6083 Series

#### 2.1.1 Connector Summary

SUMMARY		
J1	X-PCI	2.0 Ø 64-pin Pin Header 32x2
J2	Mini-PCI TYPE III	2.0 Ø 124-pin Pin Connector 62x2
J5	LAN1	2.0 Ø 12-pin RJ45 Connector
J6	LAN2	2.0 Ø 12-pin RJ45 Connector

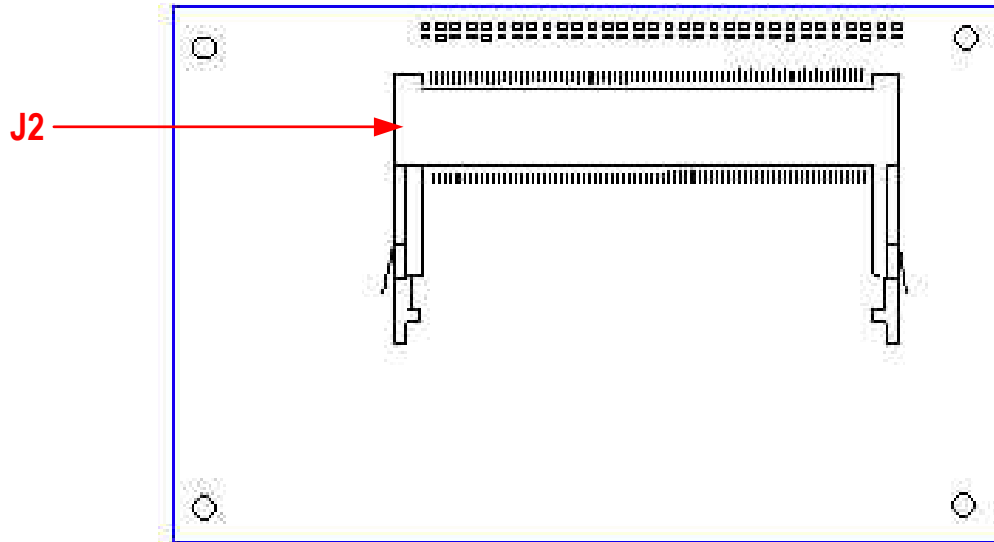
#### 2.1.2 Connectors Location

##### ● ICOP-6083L2/6082L1



## 2.1.3 Connectors Location

### ● ICOP-6083-Mini-PCI

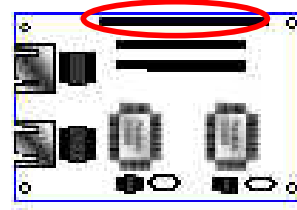
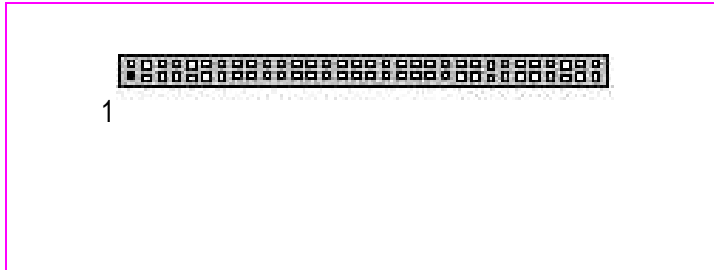


*drawn by ICOP*



## 2.1.4 Connectors Pin Assignment

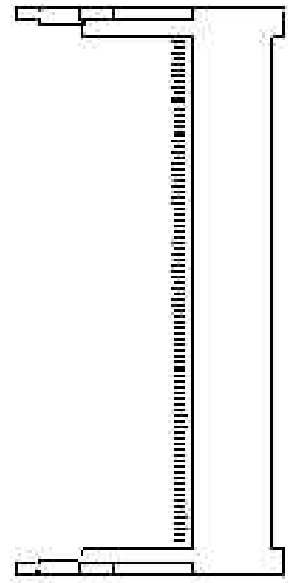
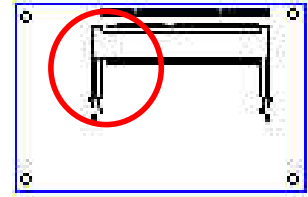
### J1: X-PCI- 2.0 Ø 32x2-Box Header



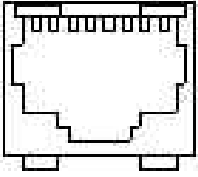

Pin #	Signal Name	Pin #	Signal Name
1	GND	2	GND
3	AD0	4	AD1
5	AD2	6	AD3
7	AD4	8	AD5
9	AD6	10	AD7
11	AD8	12	AD9
13	AD10	14	AD11
15	AD12	16	AD13
17	AD14	18	AD15
19	VCC	20	VCC
21	AD16	22	AD17
23	AD18	24	AD19
25	AD20	26	AD21
27	AD22	28	AD23
29	AD24	30	AD25
31	AD26	32	AD27
33	AD28	34	AD29
35	AD30	36	AD31
37	VCC3	38	VCC3
39	CBE-0	40	CBE-1
41	CBE-2	42	CBE-3
43	PGNT-0	44	PREQ-0
45	PGNT-1	46	PREQ-1
47	PGNT-2	48	PREQ-2
49	INT-A	50	INT-B
51	INT-C	52	INT-D
53	GND	54	GND
55	FRAME-	56	IRDY-
57	TRDY-	58	STOP-
59	SERR-	60	PAR
61	DEVSEL-	62	PLOCK-
63	PCIRST-	64	PCICLK1

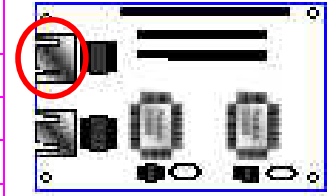
## J2: Mini-PCI Type III - 2.0 Ø 62x2-Box Header

Pin #	Signal Name	Pin #	Signal Name	Pin #	Signal Name	Pin #	Signal Name
1	NC	2	NC	3	NC	4	NC
5	NC	6	NC	7	NC	8	NC
9	NC	10	NC	11	NC	12	NC
13	NC	14	NC	15	NC	16	NC
17	INT-D	18	VCC	19	VCC3	20	INT-C
21	NC	22	NC	23	GND	24	VCC3
25	MINI CLK3	26	PCIRST 3-	27	GND	28	VCC3
29	PREQ-2	30	PGNT-2	31	VCC3	32	GND
33	AD31	34	PME-	35	AD29	36	NC
37	GND	38	AD30	39	AD27	40	VCC3
41	AD25	42	AD28	43	NC	44	AD26
45	CBE-3	46	AD24	47	AD23	48	AD22/A D20
49	GND	50	GND	51	AD21	52	AD22
53	AD19	54	AD20	55	GND	56	PAR
57	AD17	58	AD18	59	CBE-2	60	AD16
61	IRDY-	62	GND	63	VCC3	64	FRAME-
65	NC	66	TRDY-	67	SERR-	68	STOP-
69	GND	70	VCC3	71	PERR-	72	DEVSEL -
73	CBE-1	74	GND	75	AD14	76	AD15
77	GND	78	AD13	79	AD12	80	AD11
81	AD10	82	GND	83	GND	84	AD9
85	AD8	86	CBE-0	87	AD7	88	VCC3
89	VCC3	90	AD6	91	AD5	92	AD4
93	NC	94	AD2	95	AD3	96	AD0
97	VCC	98	NC	99	AD1	100	NC
101	GND	102	GND	103	NC	104	NC
105	NC	106	NC	107	NC	108	NC
109	NC	110	NC	111	NC	112	NC
113	GND	114	GND	115	NC	116	NC
117	NC	118	GND	119	GND	120	GND
121	NC	122	NC	123	VCC	124	VCC3

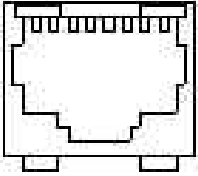



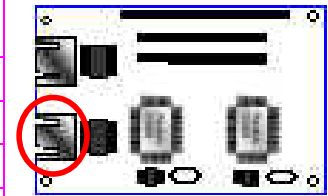
## J5: LAN1 – 2.0 Ø 12-pin RJ45 Connector

 <p>PCB Solder Side</p> 	Pin #	Signal Name	Pin #	Signal Name
	1	TX+	2	TX-
	3	RX+	4	NC
	5	NC	6	RX-
	7	NC	8	NC
	9	VCC	10	VCC
	11	GND	12	GND



## J6: LAN2 – 2.0 Ø 12-pin RJ45 Connector

 <p>PCB Solder Side</p> 	Pin #	Signal Name	Pin #	Signal Name
	1	TX+	2	TX-
	3	RX+	4	NC
	5	NC	6	RX-
	7	NC	8	NC
	9	VCC	10	VCC
	11	GND	12	GND

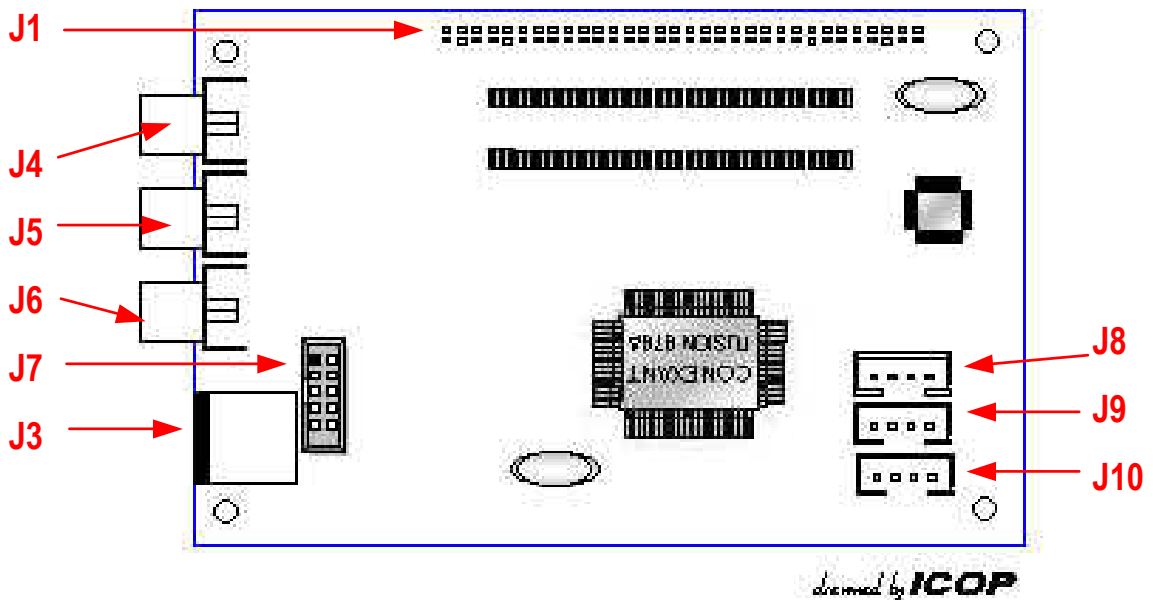


## 2.2 ICOP-6084 Series

### 2.2.1 Connector Summary

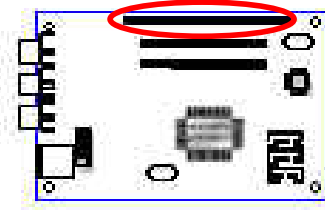
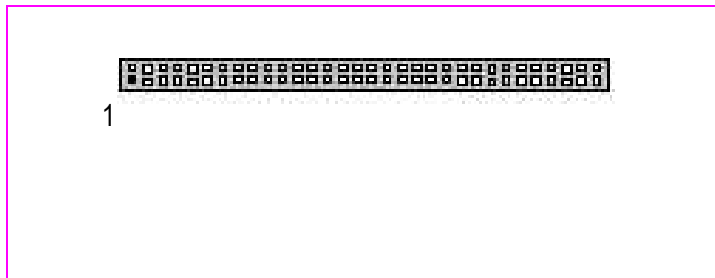
SUMMARY		
J1	X-PCI	2.0 Ø 64-pin Pin Header 32x2
J3	Y/C IN (VIDEO IN4)	4-pin Mini-Din S-Connector
J4	VIDEO IN1	2-pole RCA JACK
J5	VIDEO IN2	2-pole RCA JACK
J6	VIDEO IN3	2-pole RCA JACK
J7	Multiple VIDEO IN Connector	2.0 Ø 10-pin PinHeader 5x2
J8	LINE IN (Blue)	2.0Ø Molex Header 4x1
J9	LINE OUT (Green)	2.0Ø Molex Header 4x1
J10	MIC IN (Pink)	2.0Ø Molex Header 4x1

### 2.2.2 Connectors Location




## 2.2.3 Connectors Pin Assignment

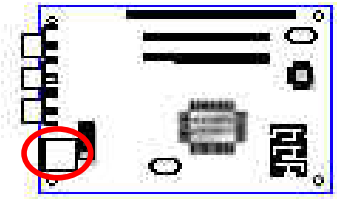
### J1: X-PCI - 2.0 Ø 32x2-Box Header



Pin #	Signal Name	Pin #	Signal Name
1	GND	2	GND
3	AD0	4	AD1
5	AD2	6	AD3
7	AD4	8	AD5
9	AD6	10	AD7
11	AD8	12	AD9
13	AD10	14	AD11
15	AD12	16	AD13
17	AD14	18	AD15
19	VCC	20	VCC
21	AD16	22	AD17
23	AD18	24	AD19
25	AD20	26	AD21
27	AD22	28	AD23
29	AD24	30	AD25
31	AD26	32	AD27
33	AD28	34	AD29
35	AD30	36	AD31
37	VCC3	38	VCC3
39	CBE-0	40	CBE-1
41	CBE-2	42	CBE-3
43	PGNT-0	44	PREQ-0
45	PGNT-1	46	PREQ-1
47	PGNT-2	48	PREQ-2
49	INT-A	50	INT-B
51	INT-C	52	INT-D
53	GND	54	GND
55	FRAME-	56	IRDY-
57	TRDY-	58	STOP-
59	SERR-	60	PAR
61	DEVSEL-	62	PLOCK-
63	PCIRST-	64	PCICLK1

### J3 : Y/C IN (VIDEO IN) – 4-pin Mini-DIN S-Connector


	Pin #	Signal Name	Pin #	Signal Name
	1	GND	2	GND
	3	V4	4	C1

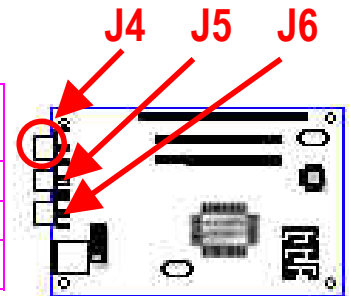


### J4 : VIDEO IN1 – 2-pole RCA JACK

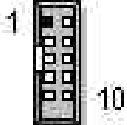
### J5 : VIDEO IN2 – 2-pole RCA JACK

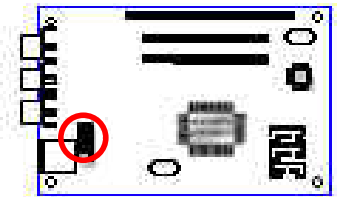
### J6 : VIDEO IN3 – 2-pole RCA JACK

	Pin #	Signal Name	Pin #	Signal Name
	1	V1	2	GND
	or 1	V2	3	GND
	or 1	V3	4	GND

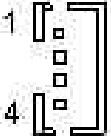


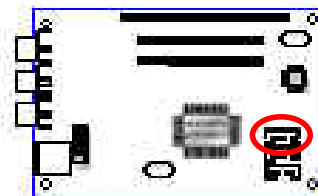
### J7: Multi VIDEO-IN CONN. - 2.0 Ø 10-pin Box Header 5x2 (Option)

	Pin #	Signal Name	Pin #	Signal Name
	1	V1	2	GND
	3	V2	4	GND
	5	V3	6	GND
	7	V4	8	GND
	9	C1	10	GND

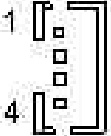


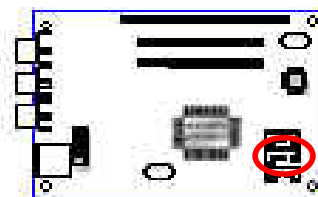
### J8: LINE IN (Blue) – 2.0 Ø 4-pin Molex Connector 4x1

	Pin #	Signal Name
	1	LINEIN_R
	2	GND
	3	GND
4	LINEIN_L	



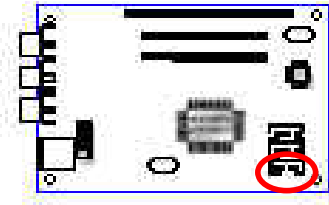
### J9: LINE OUT (Green) – 2.0 Ø 4-pin Molex Connector 4x1

	Pin #	Signal Name
	1	LOUTR
	2	GND
	3	GND
4	LOUTL	



## J10: MIC IN (Pink) – 2.0 Ø 4-pin Molex Connector 4x1

Pin #	Signal Name
1	VREFOUT
2	GND
3	GND
4	MIC1



# Chapter 3

## Network Interface

### 3.1 Introduction

The Realtek RTL-8100B 10/100Mbps Ethernet controller board supports both 10/100BASE-T and Coax 10Base-2 'BNC' connectors, and allows direct connection to your 10/100Mbps Ethernet based Local Area Network for full interaction with local servers, wide area networks such as the Internet.

I/O and IRQ settings can be done by software with the supplied utility software, or it can be set for Plug and Play compatibility. The controller supports : Full-Duplex Ethernet function to double channel bandwidth, auto media detection.

### 3.2 Network Interface

- **Chipset:** Realtek 8100B single chip
- **Type:** 10/100BASE-T
- **Transfer Mode:** Full duplex, doubles effective bandwidth
- **Buffer:** Built-in 16KB RAM Buffer.
- **Connectors:** 8-pin male header , pitch 2.0mm
- **Monitoring LEDs:** network ready indicator, network activity indicator
- **Compatibility:** NE2000

### 3.3 Software Support

- On-board EEPROM (93C46) programming
- Setup/Diagnostic program for DOS
- Help utility for easy installation
- RPL boot ROM for Novell Netware, Microsoft NT
- NDIS2 (DOS, OS/2, Lantastic, WFW3.1;K;K)
- NDIS3, NDIS4, NDIS5 for WIN95, 98, NT3.51, 4.0, 5.0, WFW3.11
- Netware 16-bit ODI driver for DOS, OS/2 and 32-bit ODI driver for Netware 3.x, 4.x, 5.0 Server
- Packet driver for UNIX Client
- SCO Unix driver
- Linux driver

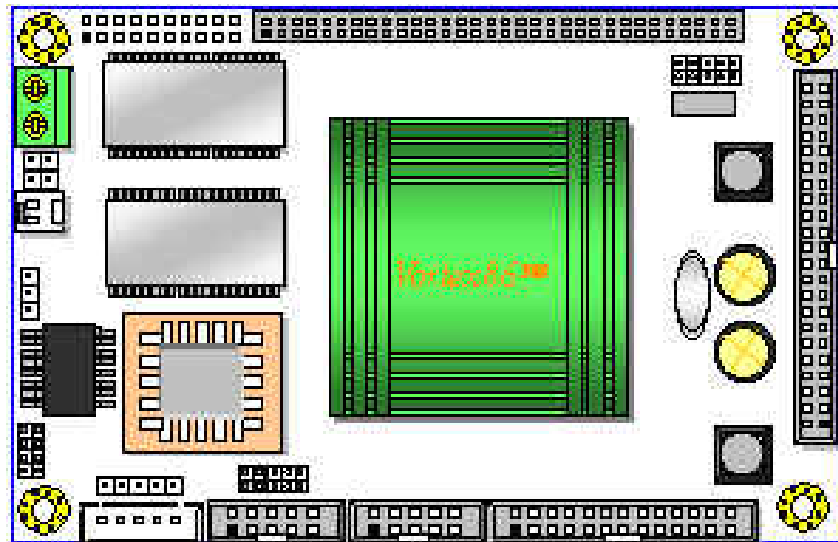
Note : All operating systems that support standard NE2000



# Appendix A

## A-1 Board Outline

### ■ ICOP-6082 (Tiny Vortex86 Module)

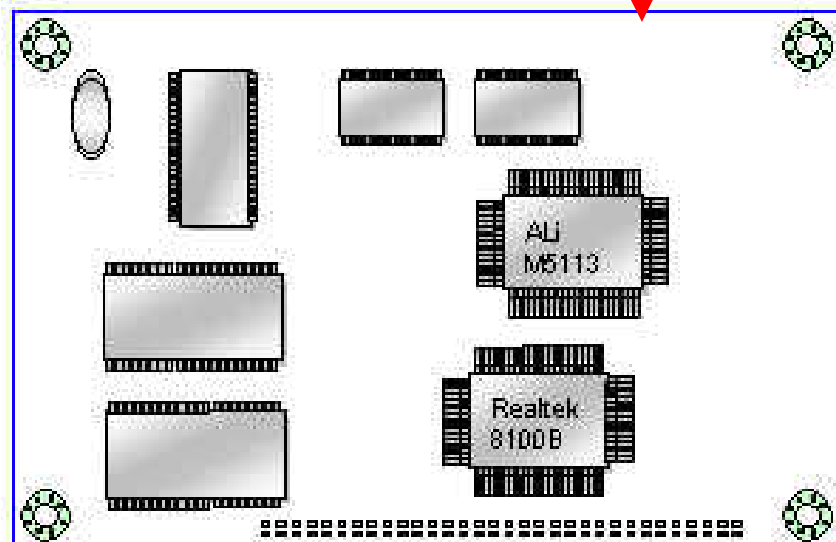


*designed by ICOP*



**Component Side**

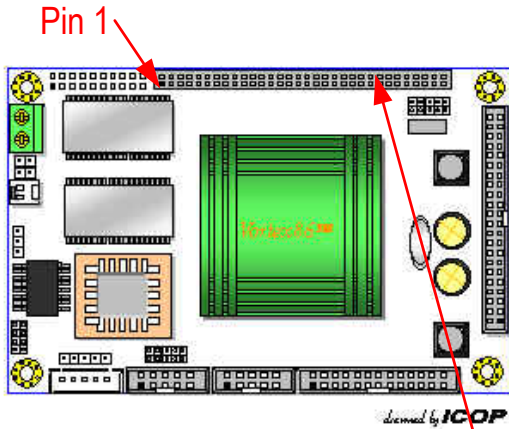
**Reverse Solder Side**



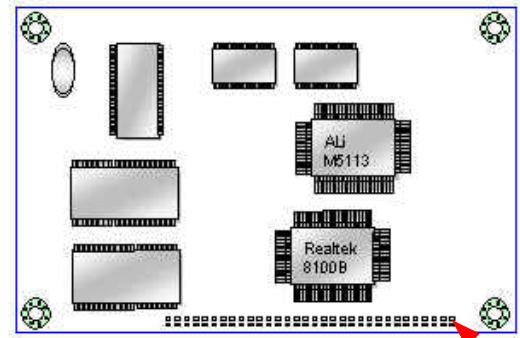
## A-2 X-PCI Bus Interface Connector

### ■ ICOP-6082 Tiny Vortex86 CPU Module

**Component Side**



**Reverse Solder Side**

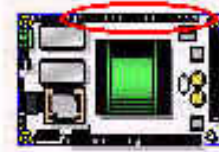


**Warning :** Be sure that you have the right orientation when adding Tiny I/O modules into the X-PCI bus of the ICOP-6082 (Tiny Vortex86™ CPU module). The available Tiny I/O modules include BT-878 Video Capture and 2-LAN I/O modules. The Manufacturer is not liable for any damage caused by wrong orientation.

## A-3 X-PCI Bus Pin Assignment

J1: X-PCI-2.0 Ø 32x2-Box Header

Pin #	Signal Name	Pin #	Signal Name
1	GND	2	GND
3	AD0	4	AD1
5	AD2	6	AD3
7	AD4	8	AD5
9	AD6	10	AD7
11	AD8	12	AD9
13	AD10	14	AD11
15	AD12	16	AD13
17	AD14	18	AD15
19	VCC	20	VCC
21	AD16	22	AD17
23	AD18	24	AD19
25	AD20	26	AD21
27	AD22	28	AD23
29	AD24	30	AD25
31	AD26	32	AD27
33	AD28	34	AD29
35	AD30	36	AD31
37	VCC3	38	VCC3
39	CBE-0	40	CBE-1
41	CBE-2	42	CBE-3
43	PGNT-0	44	PREQ-0
45	PGNT-1	46	PREQ-1
47	PGNT-2	48	PREQ-2
49	INT-A	50	INT-B
51	INT-C	52	INT-D
53	GND	54	GND
55	FRAME-	56	IRDY-
57	TRDY-	58	STOP-
59	SERR-	60	PAR
61	DEVSEL-	62	PLOCK-
63	PCIRST-	64	PCICLK1



# Warranty

This product is warranted to be in good working order for a period of one year from the date of purchase. Should this product fail to be in good working order at any time during this period, we will, at our option, replace or repair it at no additional charge except as set forth in the following terms. This warranty does not apply to products damaged by misuse, modifications, accident or disaster. Vendor assumes no liability for any damages, lost profits, lost savings or any other incidental or consequential damage resulting from the use, misuse of, originality to use this product. Vendor will not be liable for any claim made by any other related party. Return authorization must be obtained from the vendor before returned merchandise will be accepted. Authorization can be obtained by calling or faxing the vendor and requesting a Return Merchandise Authorization (RMA) number. Returned goods should always be accompanied by a clear problem description.