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## **FB1603B/C- PC/104 LAN Module User's Manual**

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July 2004  
Version: 1.1  
Part Number:  
FR1603B/C

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## Returning Your Board For Service & Technical Support

If your board requires servicing, contact the dealer from whom you purchased the product for service information. You can help assure efficient servicing of your product by following these guidelines:

- ❑ A list of your name, address, telephone, facsimile number, or email address where you may be reached during the day
- ❑ Description of you peripheral attachments
- ❑ Description of you software (operating system, version, application software, etc.) and BIOS configuration
- ❑ Description of the symptoms (Extract wording any message)

For updated BIOS, drivers, manuals, or product information, please visit us at [www.fabiatech.com](http://www.fabiatech.com)

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## Chapter 1 Introducing the FB1603B/C System Board

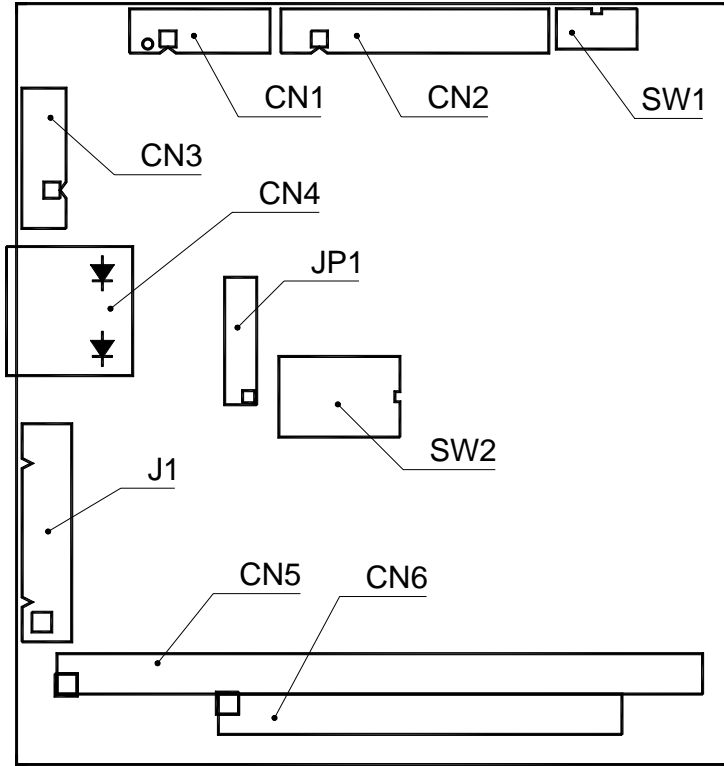
### Overview

The FB1603B is a PC/104 10/100-BaseTX LAN module. The FB1603C is a PC/104 10-BaseT LAN module. This user's manual provides information on the physical features and installation of the FB1603B/C.

### Series Comparison Table

Model	FB-1603B	FB-1603C
Chipset	SMsC 91C113	DM9008
Ethernet 10 Mbps	YES	YES
Ethernet 100 Mbps	YES	
LAN Boot Rom (Option)		YES
Board Size	90.2mm x 96mm	90.2mm x 96mm

## Layout



## Specifications

- Stack through PC/104 bus.
- 10Base-T, DM9008 chipset with RJ-45 connector. (FB1603C)
- 16 addresses selectable and 8 interrupt level selectable with software configuration. (FB1603C)
- 10/100-BaseTX, SMC 93C113 chipset with RJ-45 connector. (FB1603B)
- 8 addresses selectable and 8 interrupt level selectable. (FB1603B)
- On-Board PLCC socket for LAN boot-ROM. (FB1603B/C)
- Operating temperature 0 degree C to 60 degree C.
- Up to 95% Humidity non-condensing.
- Power Req.: +5v only 0.4A maximum.
- PC/104 form-factor (90x96mm/3.6"x3.8").

## Packing List

Upon receiving the package, verify the following things. Should any of the mentioned happens, contact us for immediate service.

- Unpack and inspect the FB1603B/C package for possible damage that may occur during the delivery process.
- Verify the accessories in the package according to the packing list and see if there is anything missing or incorrect package is included.
- If the cable(s) you use to install the FB1603B/C is not supplied from us, please make sure the specification of the cable(s) is compatible with the FB1603B/C system board.

**Note:** after you install the FB1603B/C, it is recommended that you keep the diskette or CD that contains drivers and document files, document copies, and unused cables in the carton for future use.

The following lists the accessories that may be included in your FB1603B/C package. Some accessories are optional items that are only shipped upon order.

- One FB1603B/C PC/104 LAN board
- 6-Pin or 10-pin LAN adapter cable with transfer board. (FB4605.FB4605A, Optional)
- One compact disc containing manual file in PDF format and necessary drivers and utilities



## Chapter 2 Hardware Installation

This chapter introduces the FB1603B/C board connectors and then guides you to apply them for field application.

### Before Installation

Before you install the PC/104 LAN board, make sure you follow the following descriptions.

1. Before removing the board from its anti-static bag, wear an anti-static strap to prevent the generation of Electricity Static Discharge (ESD). The ESD may be created from human body that touches the board. It may do damage to the board circuit.
2. Once you have installed the LAN board into the CPU's PC/104 bus, you can start connect internal cables. The internal cables are wire leads with plastic female connector that attached to the board's connectors. The LAN board's connectors have many numbers of pins and are the points of contact between the CPU card and other parts of the computer.
3. When you connect the LAN connectors, be careful with the pin orientations.

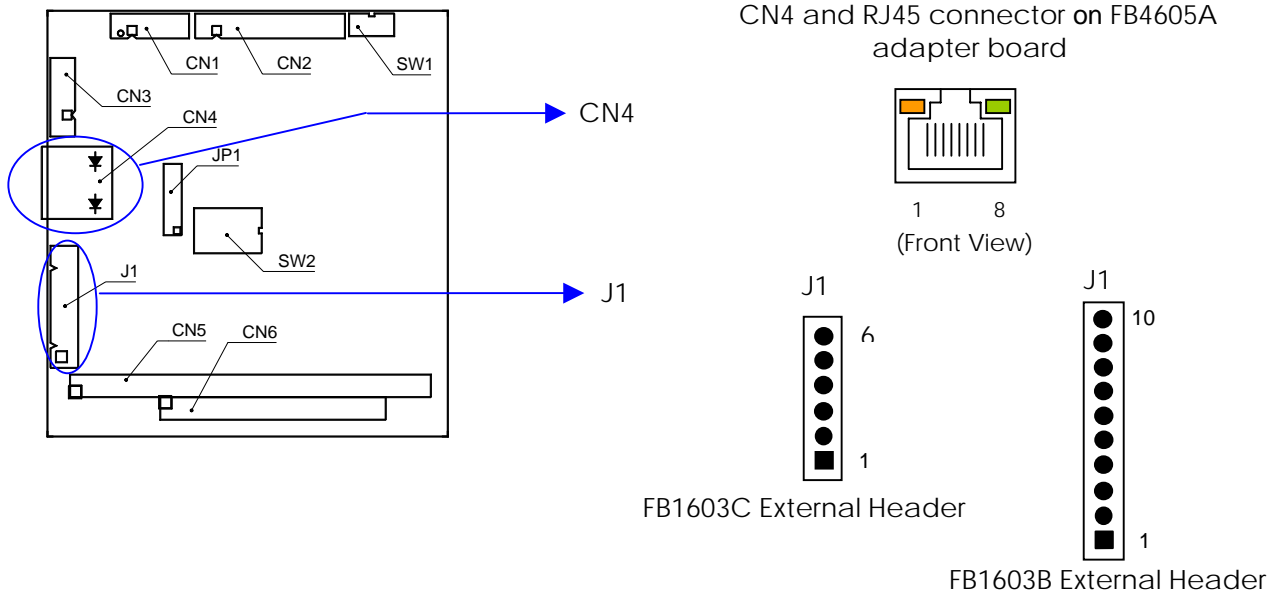
## Hardware Features

The following lists the connectors and jumpers to install the FB1603B/C.

Item	Description
CN4	LAN Connector and LED Indicators
CN5	64 pin PC/104 connector bus A & B
CN6	40 pin PC/104 connector bus C & D
J1	LAN 6/10-pin external header for LAN FB4605 (A) board
SW1	Firmware Mapping Address Select (FB1603C)
SW2	Base I/O Address & Firmware Mapping Address Select (FB1603B)

□ **CN4 & J1: RJ45 LAN /Adapter Connector with LED indicators**

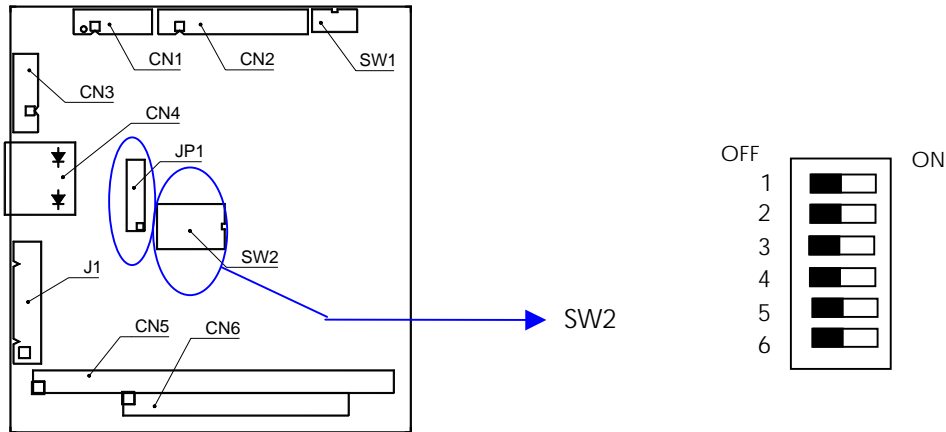
CN4 is a RJ45 connector with 2 LEDs for LAN. The left side LED (green) indicates data is being accessed and the right side LED (orange) indicates on-line status. (On indicates on-line and off indicates off-line) J1 provide twist-pair signals of external LAN port, if you use external additional adapter board (FB4605 (A)) with cable. The following table lists the pin assignments of CN4 and RJ45 connector on the FB4605 (A) LAN adapter board:



The following lists the pin assignment of CN4.

CN4	Signal	CN4	Signal
1	TPTX+	5	FBG1
2	TPTX -	6	TPRX -
3	TPRX+	7	FBG2
4	FBG1	8	FBG2

□ **FB1603B SW2 & JP1: Selecting address & IRQ**

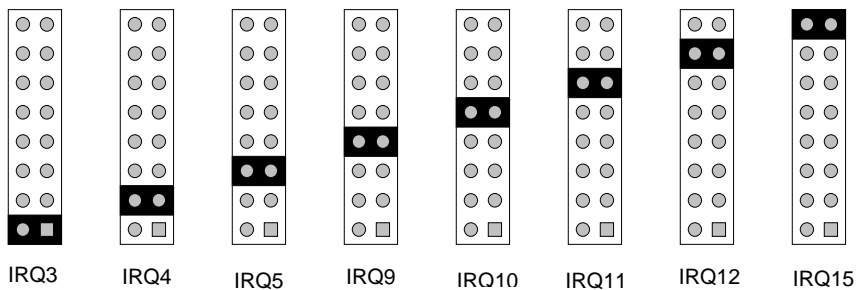


The following lists the switch settings of LAN address.

SW2-1	SW2-2	SW2-3	Mapping I/O Address	Remark
Off	Off	Off	300H	Default
Others is reserved				

SW2-5 and SW2-6 are use to select mapping address of on-board boot-ROM socket.

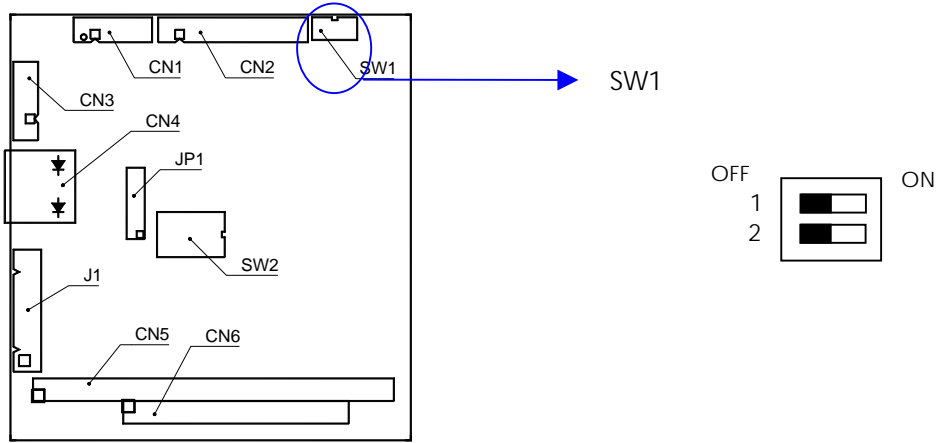
SW2-5	SW2-6	Mapping Address	Remark
Off	Off	None (Disable)	Default
On	Off	C800H:0 (8Kbytes)	
Off	On	C800H:0 (8Kbytes)	
On	On	C800H:0 (8Kbytes)	



**Factory Preset**

Note: When assign IRQ# selected the system BOIS CMOS SET UP "PLUG AND PLAY" resource IRQ# must set to ISA

□ **FB1603C SW1: Selecting boot ROM Memory address**

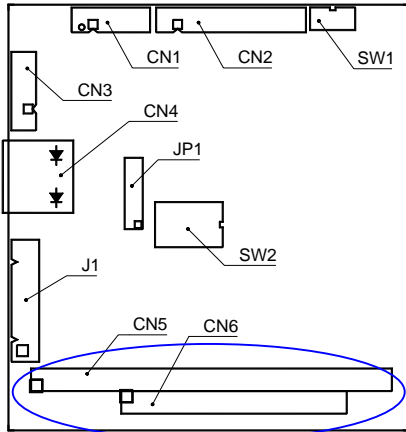


SW1 is use to select mapping address of on-board boot-ROM socket.

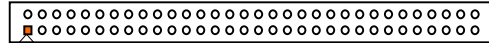
SW1-1	SW1-2	Mapping Address	Remark
Off	Off	None (Disable)	Default
On	Off	C800H:0 (8Kbytes)	
Off	On	C800H:0 (8Kbytes)	
On	On	C800H:0 (8Kbytes)	

□ **CN5, CN6: PC/104 Connector**

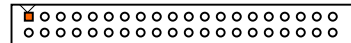
Locate the PC/104 bus connector on the FB1603B/C LAN module and its counterpart on the CPU card or board.



CN5 – BUS A & B



CN6 – BUS C & D



**PC/104 A&B Pin**

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
A1	-IOCHK	A17	SA14	B1	Ground	B17	-DACK1
A2	SD7	A18	SA13	B2	RSTDRV	B18	DRQ1
A3	SD6	A19	SA12	B3	+5V	B19	-REFSH
A4	SD5	A20	SA11	B4	IRQ9	B20	BUSCLK
A5	SD4	A21	SA10	B5	-5V (*1)	B21	IRQ7
A6	SD3	A22	SA9	B6	DRQ2	B22	IRQ6
A7	SD2	A23	SA8	B7	-12V (*1)	B23	IRQ5
A8	SD1	A24	SA7	B8	-ZWS	B24	IRQ4
A9	SD0	A25	SA6	B9	+12V	B25	IRQ3
A10	IORDY	A26	SA5	B10	Key1	B26	-DACK2
A11	AEN	A27	SA4	B11	-MEMW	B27	TC
A12	SA19	A28	SA3	B12	-MEMR	B28	ALE
A13	SA18	A29	SA2	B13	-IOW	B29	+5V
A14	SA17	A30	SA1	B14	-IOR	B30	OSC
A15	SA16	A31	SA0	B15	-DACK3	B31	Ground
A16	SA15	A32	Ground	B16	DRQ3	B32	Ground

**PC/104 C& D Pin**

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
C1	GND	C11	MEMW#	D1	Ground	D11	-DACK#5
C2	SBHE	C12	SD8	D2	MEMCS16#	D12	DREQ5
C3	LA23	C13	SD9	D3	IOCS16#	D13	DACK#6
C4	LA22	C24	SD10	D4	IRQ10	D14	DREQ6
C5	LA21	C25	SD11	D5	IRQ11	D15	DACK#7
C6	LA20	C26	SD12	D6	IRQ12	D16	DREQ7
C7	LA19	C27	SD13	D7	IRQ15	D17	VCC
C8	LA18	C28	SD14	D8	IRQ14	D18	MASTER#
C9	LA17	C29	SD15	D9	DACK#0	D19	GND
C10	MEMR#	C20	KEY	D10	DREQ0	D20	GND



## Chapter 3 Driver and Utility

The FB1603B/C provides a CD ROM includes the manual files (a complete manual file) and the required utility files.

### FB1603C LAN Driver & Utility

**Step 1:** To install the LAN utility, insert the CD ROM into the CD ROM device, and enter DRIVER>LAN>DM9008. If your system is not equipped with a CD ROM device, copy the LAN driver from the CD ROM to a 1.44" diskette.

**Step 2** Execute install.exe file.

**Note:** In the DM9008 directory, an A.EXE file is included to provide installation information and driver.

### FB1603B LAN Driver Installation Under WIN98

The following section describes the procedure installation WINDOWS 98 drivers for FB1603B.

1. Under Windows 98, Click Control Panel, then Add New Hardware.



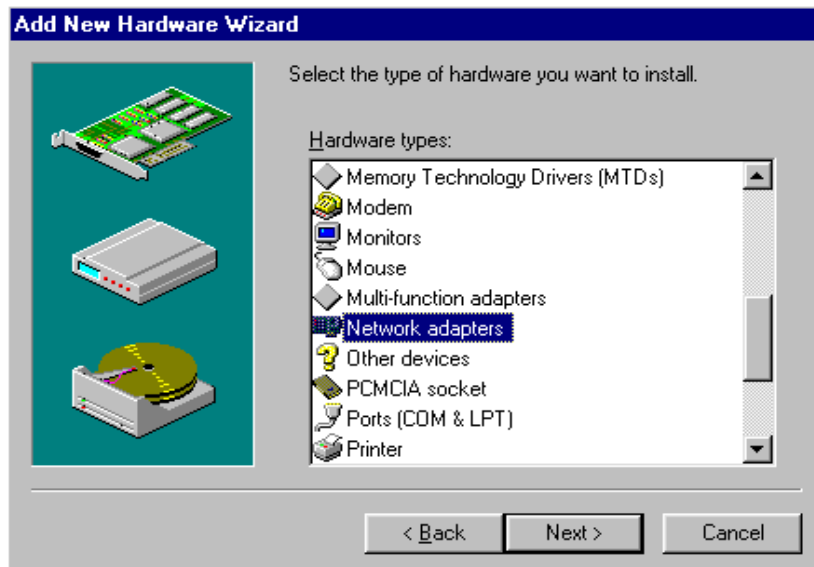
- Windows will start to search for new drivers for the Ethernet controllers, In the Add New Hard Wizard, click Next button.



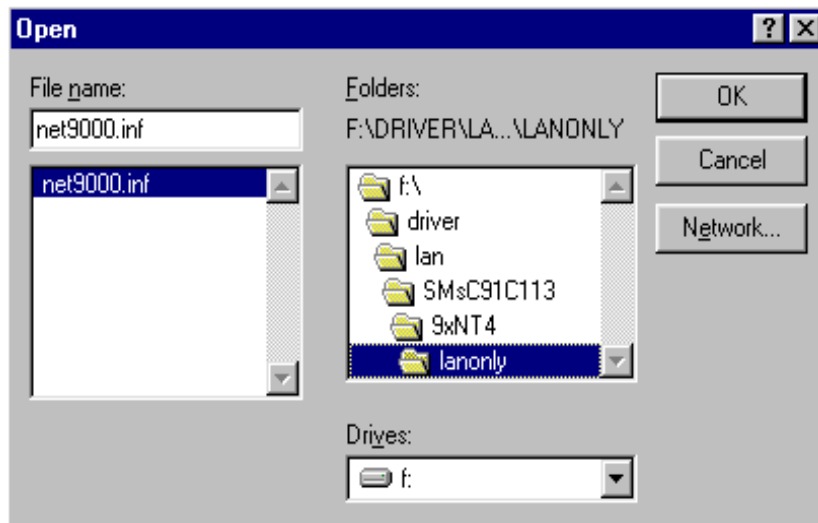
- Now, Select No, I want to select the hardware form list, and click Next button.



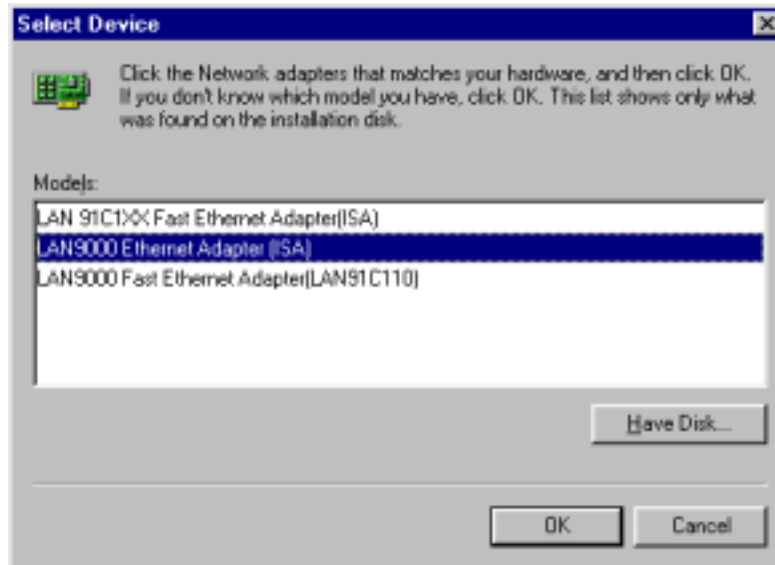
4. Select Network adapters and click Next button.



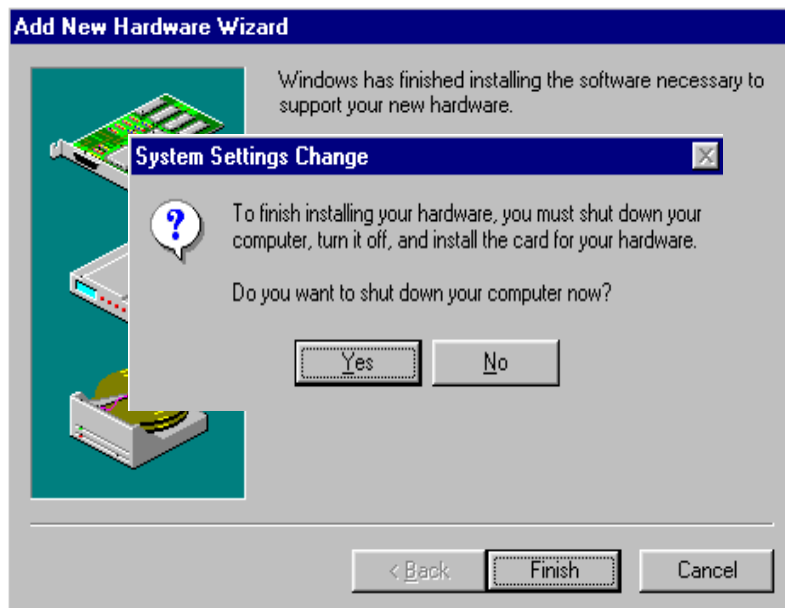
5. Select specify the path of the drivers and then click next button.



6. Select LAN9000 Ethernet Adapter (ISA) device then click OK.

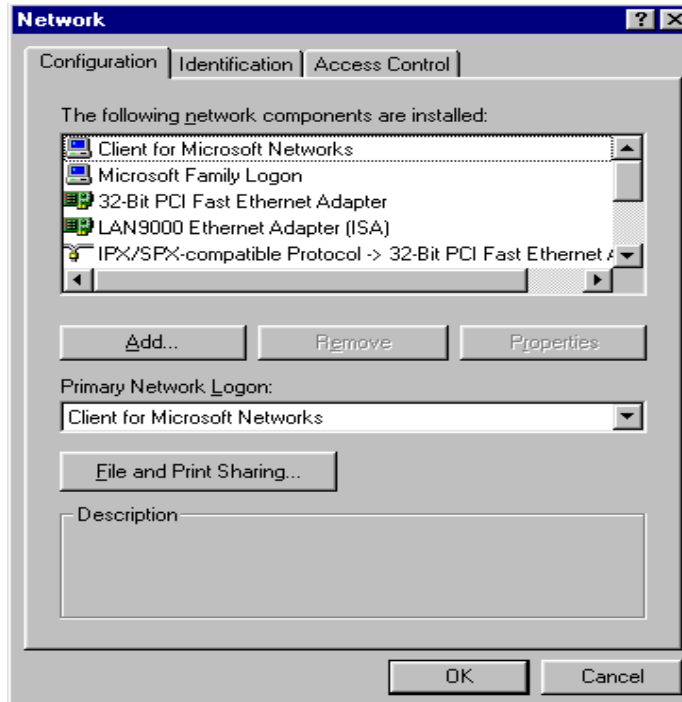


7. After files copying is done, click Finish and restart the computer when prompted.

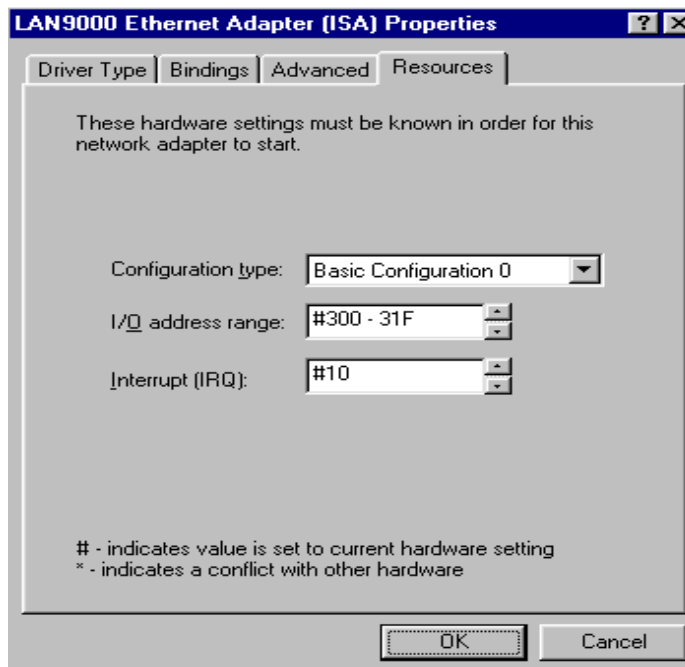


□ **FB1603B LAN Driver Setup**

1. Under Windows 98, Click Control Panel, then click Network, then click select LAN9000 Ethernet Adapter (ISA).



2. Select Resources then can configuration Interrupt (IRQ) and click OK.





## Chapter 4 Technical Reference

This section outlines the errors that may occur when you operate the system, and also gives you the suggestions on solving the problems.

Topic include:

- Trouble Shooting

### Trouble Shooting

The following information informs the error beep code and troubleshooting. Please adjust your systems according to the messages below. Make sure all the components and connectors are in proper position and firmly attached. If the errors still exist, please contact with your distributor for maintenance.

If you have problems after installation, check the following to determine the cause.

- Ensure that all cable are properly connected, all plugs are firmly seated in their sockets. Check to see if the LAN is firmly seated in its bus PC/104. Be sure it is not making contact with any other cards in the system.
- Check the length and rating of connecting cables.
- Check CMOS SETUP "PCI PLUG AND PLAY " RESOURCE IRQ Ensure that must set to ISA settings. Like below:

If you LAN board IRQ (JP1) selected to IRQ10 the under CMOS SEUP PCI PLUG AND PLAY "IRQ-10 assigned to: Legacy ISA"

```
ROM PCI/ISA BIOS (2A434FJ9)
PNP/PCI CONFIGURATION
AWARD SOFTWARE, INC.

PNP OS Installed      : No
Resources Controlled By : Manual
Reset Configuration Data : Disabled

IRQ-3 assigned to : Legacy ISA
IRQ-4 assigned to : Legacy ISA
IRQ-5 assigned to : PCI/ISA PnP
IRQ-7 assigned to : PCI/ISA PnP
IRQ-9 assigned to : PCI/ISA PnP
IRQ-10 assigned to : Legacy ISA
IRQ-11 assigned to : Legacy ISA
IRQ-12 assigned to : PCI/ISA PnP
IRQ-14 assigned to : PCI/ISA PnP
IRQ-15 assigned to : PCI/ISA PnP
DMA-0 assigned to : PCI/ISA PnP
DMA-1 assigned to : PCI/ISA PnP
DMA-3 assigned to : PCI/ISA PnP
DMA-5 assigned to : PCI/ISA PnP
DMA-6 assigned to : PCI/ISA PnP
DMA-7 assigned to : PCI/ISA PnP

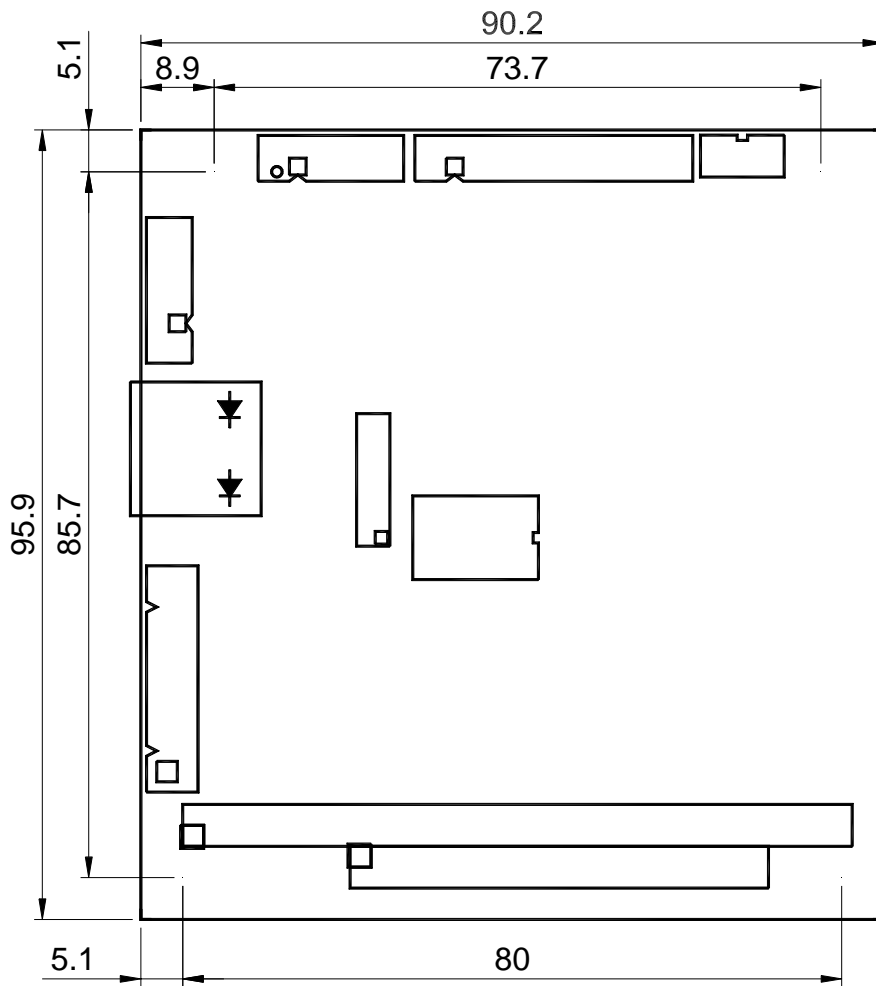
PCI IRQ Activated By : Level
Used MEM base addr  : N/A

ESC : Quit          ↑↓←→ : Select Item
F1  : Help          PU/PD/+/- : Modify
F5  : Old Values   (Shift)F2 : Color
F6  : Load BIOS Defaults
F7  : Load Setup Defaults
```

If checking these items does not locate the problem, there may be a malfunction of the computer system, display monitor or the LAN. Consult you computer dealer for assistance in locating the problem

## Appendix

### Dimension



Unit: mm