

# PCI-FC16U

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## User Manual

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## 1. Linux Software Installation

The PCI-FC16U can be used in Linux kernel 2.4.X 、 2.6.x and 4.4.x. For Linux O.S, the recommended installation and uninstall steps are given in Sec 1.1 ~ 1.2

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### 1.1 Linux Driver Installing Procedure

Step 1: Copy the Linux driver “ixpci.tar.gz”(version 0.8.14 or later version) in directory “NAPDOS\Linux” of the CD or from our company website <http://ftp.icpdas.com/pub/cd/iocard/pci/napdos/Linux/ixpci.tar.gz> to the Linux host that you want to install driver.

Step 2: Decompress the tarball “ixpci.tar.gz”.

Step 3: Type `cd' to the directory containing the package's source code and type `./configure` to configure the package for your system.

Step 4: Type `make` to compile the package.

Step 5: Type `./ixpci.inst` to install the PCI driver module and build the device file “ixpciX” in the device directory “/dev” automatically.

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### 1.2 Linux Driver Uninstalling Procedure

Step 1: Type `cd` to the directory containing the package's source code.

Step 2: Type `./ixpci.remove` to remove the PCI driver module.

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## 2. PCI-FC16U Demo Programs For Linux

All of demo programs will not work normally if PCI Linux driver would not be installed correctly. During the installation process of PCI Linux driver, the install-scripts “ixpci.inst” will setup the correct kernel driver. After driver(version 0.8.14 or the later driver version) compiled and installation, the related demo programs, declaration header files for different development environments are presented as follows.

Table 3.1

Driver Name	Directory	File Name	Description
Ixpci-0.8.14	Examples /pcifc16	dio_hw.c	Setting jumper “DIO-S0” to the mode “Jumper Selectable” and configure Port A is DI and Port B is DO.
		dio_sw.c	Setting jumper “DIO-S0” to the mode “Software Programmable” and configure Port A is DI and Port B is DO.
		get_dio_jump_sta.c	Show the status of jumper “DIO-S0”, “DIO-S1” and “DIO-S2”
		gid.c	Get the card ID
		timer0.c	Get the counter from the channel “CH0” of timer0
		timer1.c	Get the counter from the channel “CH8” of timer1

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### 2.1 Demo code “dio\_hw.c”

This demo program is used to digital output from Port B and digital in from Port A, please refer to below figure.

```
~/ixpci/examples/pcifc16# ./dio_hw
JP1(HW) : set PA(DI), PB(DO).
ESC and Enter to go out. Enter to continue.

DO = 0x0001      DI = 0x0001
DO = 0x0002      DI = 0x0002
```

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## 2.2 Demo code “dio\_sw.c”

This demo program is used to digital output from Port B and digital in from Port A, please refer to below figure.

```
~/ixpci/examples/pcifc16# ./dio_sw
JP1(SW) : set PA(DI), PB(DO) OK.
ESC and Enter to go out. Enter to continue.

DO = 0x0001      DI = 0x0001
DO = 0x0002      DI = 0x0002
```

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## 2.3 Demo code “get\_dio\_jump\_sta”

This demo program show the status of jumper “DIO-S0”, “DIO-S1” and “DIO-S2”.

```
~/ixpci/examples/pcifc16# ./get_dio_jump_sta
Jumper Status is 5      PA = DI. PB = DO
```

---

## 2.4 Demo code “gid.c”

This demo program would show the card ID.

```
~/ixpci/examples/pcifc16# ./gid
CardID is 0
```

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## 2.5 Demo code “timer0.c”

This demo program would show the counter of channel CH0 in timer0.

```
~/ixpci/examples/pcifc16# ./timer0
set  CH0 ~ CH7 = counter channel.
set  CH0 ~ CH7 speed mode = 1Hz ~ 1kHz.
Select channel CH0.
Clear channel CH0.
ESC and Enter to go out. Enter to continue.

Latch channel CH0.
Read Timer0 CH0 counter =  0

Latch channel CH0.
Read Timer0 CH0 counter = 17
```

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## 2.6 Demo code “timer1.c”

This demo program would show the counter of channel CH8 in timer1.

```
~/ixpci/examples/pcifc16# ./timer1
set  CH8 ~ CH15 = counter channel.
set  CH8 ~ CH15 speed mode = 1Hz ~ 1kHz.
Select channel CH8.
Clear channel CH8.
ESC and Enter to go out. Enter to continue.

Latch channel CH8.
Read Timer1 CH8 counter =  0

Latch channel CH8.
Read Timer1 CH8 counter = 17
```