

Chapter 5.

USING I/O CARDS

Introduction

Unlike SRAM and Flash memory cards, I/O (Input/Output) cards are not used to store data but are actually devices to perform some special function. I/O devices are instruments that control incoming and outgoing data flow. Traditional I/O devices for desktop PCs come in the form of interface cards that are plugged into the slots on the mainboard of the computer and include such devices as network cards, modems and fax modems.

In order to support portable computers, which do not support the installation of interface cards, these devices were designed as PCMCIA cards which could be plugged into the standard PCMCIA slot used for memory cards. I/O PCMCIA cards are usually Type II cards, i.e. cards of 5mm thickness. In this chapter we explain how to use I/O PCMCIA cards with the PC/104 PCMCIA Module. Note that we do not deal with Type II solid state hard disk drive cards, which are explained in detail in the next chapter.

Note

Configuring PCMCIA cards used to be an arduous process that often required intensive troubleshooting.

SystemSoft's Cardsoft / CardWizard / CardWorks software greatly simplifies configuration and setup. Consult the on-line help in these software programs for detailed information about configuration.

Generally speaking , configuring I/O cards requires two main steps:

1. Install the hardware driver
2. Set the COM port or I/O address and IRQ settings

I/O Card Beep Codes

Just as with memory cards, when an I/O card is inserted in the PC/104 PCMCIA Module slot, an audible beep is issued to inform you of the status of the card. There are two kinds of audible message with I/O cards, which is:

Single low pitched beep = Card not inserted properly, defective card, software improperly installed or, for SRAM cards, low battery

Two high-pitched beeps (second has higher pitch than first) = Hardware and software is correctly installed and everything is working fine

PCMCIA I/O Card Types

As we have mentioned, there are a number of different types of PCMCIA I/O cards and the key points regarding their use with PC/104 PCMCIA Module are given here. Note, that in order to be able to use PCMCIA I/O cards, you must have installed the PC/104 PCMCIA Module drivers as detailed in Chapter 3. Although this type of PCMCIA card is not used to store data, and therefore requires no formatting, the PC/104 PCMCIA Module drivers must have been correctly installed in order to allow your system to recognize the PC/104 PCMCIA Module slot.

Modem and Fax/Modem Cards

Automatic COM Port Assignment

When installing an internal or external serial modem or fax modem, the device must be assigned a COM port. PCMCIA modems and fax modems are no different, and the correct COM port must be assigned in order for the devices to function correctly.

When you insert a modem or fax/modem in a PC/104 PCMCIA Module slot, the following COM port assignments are made:

- If no COM port is being used, the PCMCIA modem is automatically assigned to COM 1.
- If COM 1 is being used, the PCMCIA modem is automatically assigned to COM 2.
- If COM 1 & COM 2 are being used, the PCMCIA modem is automatically assigned to COM 3.

If for example, you have a mouse connected to COM 1 and you insert a PCMCIA modem card in Socket 1 or Socket 2, the modem is automatically assigned to COM2. Although the hardware COM port assignment is automatic, in your communication software, you must specify that your communication device is connected to COM2.

PCMCIA Network Cards

After fax/modem and modem cards, the most commonly available PCMCIA I/O device is a Local Area Network (LAN) card, which allows your system to be hooked into a network. The PC/104 PCMCIA Module hardware and software is fully compatible with most popular PCMCIA LAN cards, including those from IBM, National Semiconductor (NS) and D-Link, Accton, Svec and Socket Communications Inc.'s Socket EA card. These cards can be used with PC/104 PCMCIA Module with no further configuration. Intel's Ethernet card can also be used, though please note the section below on using Intel's PCMCIA Ethernet Card.

Using Intel's PCMCIA Ethernet Card

If you wish to use Intel's PCMCIA ethernet card, it is necessary to make certain adjustments to ensure correct operation. Intel's PCMCIA card comes with a complete software package which is installed on the hard disk drive. The Intel installation program will modify your CONFIG.SYS file and your AUTOEXEC.BAT files. The following statements are added to the AUTOEXEC.BAT file:

```
C:\CARDMGR\CCMGR.EXE  
C:\INTELAN\LSL.COM  
C:\INTELAN\INTEL595.COM  
C:\INTELAN\IPXODI.COM  
C:\INTELAN\NETX.EXE
```

No change need to be made to these statements.

The following statements will be added to the CONFIG.SYS file by SystemSoft CardSoft:

```
DEVICE=C:\CARDSOFT\SSVADEM.EXE  
(Socket Services Driver)  
DEVICE=C:\CARDSOFT\CS.EXE  
(Card Services Driver)  
DEVICE=C:\CARDSOFT\CSALLOC.EXE  
DEVICE=C:\CARDSOFT\CARDID.EXE
```

The first thing you must do is check that the above statements appear **after** the statements used to load the PC/104 PCMCIA Module drivers which are detailed on page 3-5. If they do not, use any text editor to edit your CONFIG.SYS file and move the statements below the PC/104 PCMCIA Module statements.

The first two statements load SystemSoft's Socket services and Card Services software drivers which are used by Intel. Because your PC/104 PCMCIA Module software already provides its own socket services and card services drivers these statements should be removed or disabled to prevent conflict. To disable these two statements, simply add the REM (remark) statement in front of them.

To do this, use any text editor to call up the CONFIG.SYS file and edit the statements as below:

```
REM DEVICE=C:\CARDSOFT\SSVADEM.EXE  
REM DEVICE=C:\CARDSOFT\CS.EXE
```

Adding the REM statement will disable these two lines. You could also delete these two statements completely, though adding REM ensures they are still there for reference in case you need to use them in the future.

Disabling these two statements will ensure that your Intel PCMCIA Ethernet card will function perfectly with PC/104 PCMCIA Module and you can use all the other features. Note that if you delete the PC/104 PCMCIA Module socket services and card services drivers and use those provided with Intel's software, you will be able to use your Intel card but will not be able to access the second PCMCIA slot or use any other device.

PCMCIA LAN Card Software in General

Due to the complicated nature of LAN card configuration, most PCMCIA LAN cards come with their own software. It will usually be advisable to run this software to make sure you have the full range of configuration options available. In addition to allowing you to configure the LAN card, most PCMCIA LAN card software includes a complete set of PCMCIA drivers which may be installed in the CONFIG.SYS file in place of the PC/104 PCMCIA Module drivers. Since some LAN cards are not designed totally according to the PCMCIA standards and include proprietary technology, it may be the case that such cards will run better if the drivers provided with the card are installed.

Note that the PC/104 PCMCIA Module hardware fully supports PCMCIA drivers from third parties.

