

# MPCI954/952 IO Cards Linux Installation manual



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## ◆ *Installation Guide for PCI Serial Ports*

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This installation guide describes the procedures to install MPC1954/952 PCI serial ports in Linux platform.

### *[Linux Platform]*

- Operating System : RedHat V6.1/V6.0 (Kernel 2.2.x / 2.0.x)
- Terminal Emulation AP : minicom / xminicom
- Internet Dialer : Kppp

### *[Installation Steps]*

#### **(1) Find the available serial ports**

Since Linux only support 4 serial ports (ttyS0, ttyS1, ttyS2, ttyS3) under the default condition. Most likely, ttyS0 & ttyS1 are supported by mother board's built-in 16550 controllers and ttyS2 & ttyS3 are free for additional I/O card. (Note that ttyS2: S is upper case)

It could be checked by the following commands.

```
#setserial /dev/ttyS0 -a      (COM1)
#setserial /dev/ttyS1 -a      (COM2)
#setserial /dev/ttyS2 -a      (COM3)
#setserial /dev/ttyS3 -a      (COM4)
```

If COM1 is used by mouse, the response is similar to

```
/dev/ttyS0 : Device or resource busy
```

If the COM1 does not attach any device, the response is similar to

```
/dev/ttyS0, Line 0, UART: 16550A, Port: 0x3f8, irq: 4
Baud_base: 115200, clos_delay: 50, divisor: 0
closing_wait: 3000, closing_wait2: infinite
Flags: spd_normal skip_test
```

In case ttyS2 (COM3) is free, the response for command  
**# setserial /dev/ttyS2 -a** is shown below.

```
/dev/ttyS2, Line 2, UART: unknown, Port: 0x3e8, irq: 4
      Baud_base: 115200, clos_delay: 50, divisor: 0
      closing_wait: 3000, closing_wait2: infinite
      Flags: spd_normal skip_test
            (note that UART: unknown)
```

In case ttyS3 (COM4) is free, the response for command **# setserial /dev/ttyS3 -a** is shown below.

```
/dev/ttyS3, Line 3, UART: unknown, Port: 0x2e8, irq: 3
      Baud_base: 115200, clos_delay: 50, divisor: 0
      closing_wait: 3000, closing_wait2: infinite
      Flags: spd_normal skip_test
            (note that UART: unknown)
```

Finally, the /dev/ttyS2 & /dev/ttyS3 are free for PCI serial ports.

## (2) Find the PCI card resource ( IO port address & IRQ) for the serial ports

Please enter the command "**#more /proc/pci**".

The response is similar to the following

```
.....
.....
Bus 0, Device 11, function 0:
    ^^
    Serial controller : Unknown vendor Unknown device (rev 1).
    Vendor id=1415, Device id=9501/9505
    Medium devsel. Fast back-to-back capable. IRQ 10
                                   ^^
    I/O at 0xef80 [0xef81]
        ^^^^  ^^^^
.....
```

(note : ^^ means it could be different from the above.  
They are varied with the different PC.)

From the /proc/pci file, it is possible to find the PCI card's IO port address and IRQ. Especially, the MPC1954/952 card always shows

"Vendor id=**1415**, Device id=9501/9505".

### **(3) Configure the parameters for ttyS2 & ttyS3**

for EXSYS 41051 card (PCI 1S), please enter (if ttyS2 is free)

```
# setserial /dev/ttyS2 port 0xef80 UART 16550A
    irq 10 Baud_base 921600
```

for EXSYS 41092 card (PCI 2S), please enter (if ttyS2 & ttyS3 are free)

```
# setserial /dev/ttyS2 port 0xef80 UART 16550A
    irq 10 Baud_base 921600
# setserial /dev/ttyS3 port 0xef88 UART 16550A
    irq 10 Baud_base 921600
```

### **(4) Check the setting for ttyS2 & ttyS3**

Please enter **# setserial /dev/ttyS2 -a**

The response look likes below

```
/dev/ttyS2, Line 2, UART: 16550A, Port: 0xef80, irq: 10
    Baud_base: 921600, clos_delay: 50, divisor: 0
    closing_wait: 3000, closing_wait2: infinite
    Flags: spd_normal skip_test
```

### **(5) Then the ttyS2 & ttyS3 are ready for application**

(eg. minicom -s or xminicom -s or Kppp ...)

Important Notes :

- (1) Since all serial ports on MPCI954/952 PCI card are using only one interrupt pin, you must set them the same IRQ number with **setserial** command.
- (2) Un-installation,  
e.g. `#rm /dev/ttyS4` (remove ttyS4 device)