

# Using Powertech MP5200 UPS with Linux

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## Introduction

The Powertech MP5200 UPS can be used with Linux and Windows. The manufacturer provides a utility for both operating systems. However, the sourcecode is not provided so it may be difficult to use the UPS with embedded Linux systems like OpenWRT compatible router hardware for instance.

This document contains notes on how the UPS can be read out in order to properly unmount harddisks on an OpenWRT fileserver in case of a power-out or brown-out. In this state it is safe to shutdown the appliance or just run out of battery, if the mains come back online the harddisks are mounted again.

## Disclaimer

This document is written by Tom Stoeveken. Powertech is not responsible for this document. Using any of the information given in this document is at your own risk.

## Reading the status of mains power

The UPS communicates with the PC via serial port, more precisely via the status lines on the serial port. If RTS is set to 1 the UPS gives the status of the mains via CTS line. The following C program shows how to read if the 240 V is present or absent:

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/ioctl.h>
#include <fcntl.h>

int main(int argc, char *argv[])
{
    int fd;
    int status;

    if (argc != 2 ) {
        printf("Usage: %s <serial-device>\n", argv[0]);
        exit(1);
    }

    if ((fd = open(argv[1], O_RDWR)) < 0) {
        printf("Couldn't open %s\n", argv[1]);
        exit(1);
    }

    /* get status first */
    ioctl(fd, TIOCMGET, &status);

    /* Set RTS = 0, DTR = 0 */
    status &= ~TIOCM_RTS;
    status &= ~TIOCM_DTR;
    ioctl(fd, TIOCMSET, &status);

    /* Set RTS = 1 */
    status |= TIOCM_RTS;
    ioctl(fd, TIOCMSET, &status);
}
```

```

/* sleep 500 ms */
usleep(500*1000);

/* enter endless loop */
while(1) {

    /* read status bits */
    ioctl(fd, TIOCMGET, &status);

    /* debugging...
    printf("CTS: %d, DCD: %d\n", status&TIOCM_CTS, status&TIOCM_CAR);
    */

    /* display */
    if (status&TIOCM_CTS) {
        printf("240V OK\n");
    } else {
        printf("240V gone\n");
    }

    /* wait 500 ms */
    usleep(500*1000);
}

close(fd);
}

```

Compiling the sourcecode is straight forward:

```
$ gcc -pedantic -Wall ups.c -o ups
```

In order to cross-compile just use the cross compiler instead of the native compiler.

## A simple UPS Daemon

...to be done...