

USB Mass Storage Device FAQ



USB Microcontrollers

FAQ

Doc Control

Rev	Purpose of Modifications	Date
0.0	Creation date	20 April 2005

References

- Universal Serial Bus Specification, revision 2.0
- Universal Serial Bus Class Definition for Communication Devices, version 1.1
- USB Mass Storage Overview, revision 1.2
- USB Mass Storage Bulk Only, revision 1.0

Abbreviations

- USB: Universal Serial Bus
- VID: Vendor Identifier
- PID: Product Identifier
- LUN: Logical Unit Number

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Operating Systems

The following OSs support the USB Mass Storage Device class:

- Linux: USB mass storage is available in kernel 2.4 or later
- USB mass storage is available in Mac OS 9/X or later
- Windows XP: native driver
- Windows 2000: native driver
- Windows Me: native driver
- Windows 98SE: Vendor specific driver required

LUN support

In order to support multiple LUN, please verify that you have correctly installed the latest service pack of your OS. Multiple LUN will work on:

- Windows XP SP1 or more
- Windows 2000 SP4 or more

Minimum size under windows

The minimum number of sectors to declare in order to be recognized by windows is 8.

How to use my USB Mass Storage Device under Windows 98SE ?

There is no native driver to support USB Mass Storage in Windows 98SE. Atmel provides drivers derived from the SDK/DDK Microsoft example. For ATMEL products, we deliver this driver.

This driver is composed of 3 files:

- a .inf file
- atusbms.sys file
- atusbms.pdr file

The atusbms.sys and atusbms.pdr files are the system drivers for Windows 98SE.

The .inf file describes the driver to load for your application. The application is recognized using the Vendor ID (VID) and Product ID (PID). Because you will use your own VID/PID in the final application, you have to modify the .inf file with the corresponding VID/PID.

I can't format under Windows !

Depending on the FAT type, Windows can fail if the number of sector is too small.

How can I disconnect my Mass Storage Device ?

Under Windows, each Mass Storage device appears in the System Tray. Click on the corresponding icon in order to safely disconnect your USB device.

I can't see the "Safe Disconnect" icon in the System Tray !

There are 2 conditions for that:

- be under Windows 2000 Professional, server
- use a composite Mass Storage device (mass storage + mouse for example)

In such a situation, no icon will appear in the System Tray. It's a bug from Microsoft. Please refers to this page:

<http://support.microsoft.com/default.aspx?scid=kb:en-us:841880&Product=win2000>

To solve this problem, use the Hotfix from Microsoft.

My device is enumerated but I can't see it under Linux !

Check with the USBview tool that your device is correctly enumerated.

The Linux kernel requires a Master Boot Record (MBR) and a Partition Boot Record (PBR). In root mode ("su" command), launch the fdisk tool for your device "fdisk /dev/sdx" (x is the number of your device), erase all existing partitions, and create a new partition. By default, this partition will use a Linux file system. You can change it to a FAT12 or FAT16 in order to be recognized by every OS.

```
$ su
Password:
# fdisk /dev/sdx
Command : d
number of the partition (1-4) : 1
Command : d
number of the partition (1-4) : 2
Command : d
number of the partition (1-4) : 3
Command : d
number of the partition (1-4) : 4
Command : n
   e Extended
   p Primary partition
p
First cylinder ():
Last cylinder():
Command: t
Number of the partition: 1
Code Hex : 6
Command: w
```

