

# Smart and Nice

USB flash drives

# What is it?

- A small, portable flash memory card that plugs into a computer's USB port and functions as a portable hard drive.
- A data storage device with an integrated Universal Serial Bus (USB) interface

# History

- USB flash drives were invented by specialists of the Israel company M-Systems, who filed US patent in April 1999.
- The first USB flash drive appeared on the market in late 2000, providing a storage capacity of 8 MB.
- the maximum available storage capacity gradually doubled (16 MB, 32 MB, etc.) all the way up to reaching capacities of 512 GB and 1 TB by January 2013.

# Essential components

- There are typically five parts to a flash drive:
- Standard-A USB plug – provides a physical interface to the host computer.
- USB mass storage controller – a small microcontroller with a small amount of on-chip ROM and RAM.
- NAND flash memory chip(s) – stores data (NAND flash is typically also used in digital cameras).
- Crystal oscillator – produces the device's main 12 MHz clock signal and controls the device's data output through a phase-locked loop.
- Cover – typically made of plastic or metal, protecting the electronics against mechanical stress and even possible short circuits.

# How do we use them

- Personal data transport
- Secure storage of data, application and software files
- Updating motherboard firmware
- Booting operating systems
- Operating system installation media
- Audio players
- Security systems (USB keys)

# Interesting

- USB flash drives have been integrated into other commonly carried items, such as watches, pens, and even the Swiss Army Knife; others have been fitted with novelty cases such as toy cars or LEGO bricks. Particularly in the Far East bizarre USB flash drives with images of dragons, cats or aliens are very popular. The small size, robustness and cheapness of USB flash drives make them an increasingly popular peripheral for case modding.
- Some flash drives are expensive because they have 1TB storage capacities; others are extremely pricey because they're mushroom-shaped gadgets covered in diamonds and other precious stones. Swiss jewelry maker recently launched luxury Magic Mushroom USB flash drives that can only store up to 32GB of data, but could cost almost \$37,000 depending on color of diamonds

# Why do we like them so much

- They are small
- They are fast
- They have thousands of times more capacity than floppy disks or CDs
- They are durable and reliable because they have no moving parts
- They are immune to magnetic interference (unlike floppy disks), and are unharmed by surface scratches (unlike CDs).
- They look nice and we can choose the form we like

