**Comparison chart**

| **Attributes** | **IDE** | **SATA** |
| --- | --- | --- |
| **Stands for / AKA** | IDE: Integrated Drive Electronics / PATA: Parallel Advanced Technology Attachment | Serial ATA or Serial Advanced Technology Attachment. |
| **Advantages** | Maximum compatibility | Inexpensive, large storage capacity. |
| **Disadvantages** | Lacks support for new technology such as native command queuing and hot-plugging hard drives | Lower [MTBF](http://en.wikipedia.org/wiki/MTBF) than [SAS](http://www.diffen.com/difference/SATA_vs_Serial_Attached_SCSI) (700,000 hours to 1.2 million hours of use at 25 [°C](http://www.diffen.com/difference/Special%3AInformation/Celsius)), less suited for servers. |
| **Hot plugging (add/remove component while the computer is running)** | IDE interface does not support hot plugging | SATA interface supports hot plugging |
| **Speed** | data transfers at the rate of up to 133MB/s | Data transfers at the rate of 150MB/s to 600MB/s. |
| **Data cable** | Ribbon-like, wide, can be up to 18 inches long | Narrow, can be up to a meter (roughly 3ft) long. Power and data split into two connections. |
| **Lineage** | Superseded by [SATA](http://www.diffen.com/difference/SATA_vs_Serial_Attached_SCSI) | Supersedes Parallel ATA (PATA) aka IDE |
| **Year Created** | 1986 | 2003 |
| **Jumpers** | In a computer system, it's possible to have more than one harddrive. To connect multiple IDE drives, you need to chain the ribbon cables from one to the next. The computer system has no idea which is the main drive, from which to load the OS. | SATA drives don't use jumpers. Each drive connects directly to the motherboard. To set the primary drive, you can access the settings from the computers BIOS (special software that runs when you start the computer). |



وحدة الخزن الرئيسية في الحاسبة الالكترونية

Bit (Binary Digit): - وهو اصغر وحدة خزن في الحاسبة ويقاس بالنظام الثنائي (Binary System) وتكون قيمة البت الواحد اما 0 او 1 .

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|   |   |   |   |   |   |   |   |
| 1 byte = 8- bit |

* + Byte = 8 Bits.
	+ Kilo Byte (KB) = 1024 Byte.
	+ Mega Byte (MB) = 1024 KB.
	+ Giga Byte (GB) = 1024 MB.
	+ Tera Byte (TB) =1024 GB.

It is 1024 Bytes only if you are talking about the capacity of data storage that is organized in powers of two. This includes memory chips (for example, 10 address lines give you 2^10 = 1024 addresses). It also includes the capacity of formatted disks with a sector size of 512 Bytes = 2^9 Bytes or a multiple thereof. However, this usage is incompatible to the SI definition of "kilo" as 1000.

10^3 = 1000

2^10 = 1024