

A quick guide to USB 3.0

What, why, who, how explained

by Rob Kerr published on 18 March 2009

What is it?

USB 3.0 is the next generation of the Universal Serial Bus technology. It was first demonstrated at an Intel developers conference way back in September 2007, where its fast transfer speeds were first shown off to the public. News of this technology has recently been picking up more and more headlines of late, as it's been said the first test specification is finally close to completion and manufacturers are starting to talk about its arrival and benefits.

The key feature of USB 3.0 is that it's been touted as being ten times faster in transferring data, as compared to the current USB 2.0 standard. That along with the connectors being backwards compatible, so there will be no need to throw away, replace or learn about something new in a hurry.

What are the variations of the technology?

There really aren't any variations that have been made public to date on the next version of USB and we don't expect there will be either. It will be as standard as the common place single connecting port of a USB 2.0.

On the inside however, it's all changed. There's a new bus or circuitry for handling the increased data speeds, that's known as SuperSpeed. The cables are said to have changed on the inside too, with four additional wires being included making the cables themselves a tad thicker. As far as the preliminary images of the connectors go, they look no different to the normal USB ports seen around today - the connector design will support existing technology and current cabling too.

Why should I care?

USB 3.0 is said to be capable of delivering transfer speeds of 5 Gigabits per second, whereas USB 2.0 is only capable of 480 megabits



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per second. That's more than ten times the speed of existing USB 2.0 which is a tad old in itself, as it's now been with us for over 8 years replacing the older standard of USB 1.1.

5 Gbps is the theoretical maximum speed of USB 3.0 which translates to 0.625 Gigabytes per second, in rough calculations. Transferring a full 25GB Blu-ray movie across this next generation setup should take just 70 seconds - clearly highlighting exactly how fast this will be in its data throughput and its overall uses all around.

What's a good example in practice?

The technology is still in the early stages of being finalised, despite already being around for 2 years. In June this year manufacturers will be officially testing out the specification, with a view to hopefully including this technology in their systems later on this year or early next.

We're expecting the initial uses of USB 3.0 to be largely in the field of heavy data transfers, due to its throughput capabilities. External hard drives or very large high Terabyte sizes will undoubtedly capitalise on the standard's fast speeds of delivery, and rightly so too.

Solid State Drives (SSD) could also benefit under the new standard, as the bottleneck (where it's being held back from completing its true possible speeds) could go some way to being eliminated here. SATA - II drives and their native 3Gbps speeds could also benefit, as could the soon-to-be upcoming SATA 6 Gbps - SATA's own next generation.

The current standards of digital media in recording devices are moving towards the high definition end of the spectrum, where USB 3.0 will surely be of use. The default standard around today is the measly 2.0 speed for transferring data, or the FireWire options both of which really do not measure up to USB 3.0. The vast amounts of media needed to be transferred for editing purposes, could take just moments on this new

technology as compared to others around.

Is there a competing technology that I should be aware of?

As it stands today, there really isn't a competing data transfer speed that will be up to matching USB 3.0 for the consumer in terms of speed or the possible amounts of data throughput.

The closest around is FireWire and its few standards, along with eSata. FireWire's standards are noted as being 400 and 800 in their variations, with those speeds being around 400Mbps and 800Mbps respectively. On the horizon is said to be the FireWire S800T, S1600 and S3200, it's been mentioned these are capable of 800 Mbps, 1.6 Gbps and 3.2 Gbps although there's no news as to when they'll be available.

What is in store for the future?

The draft ratification is said to be near completion and very close to being signed off. After this point is reached, we'll start to see announcements from companies that are ready to start including the new standard within their systems, hopefully later on this year or early next year.

The first incorporators of this technology will most likely be the motherboard manufacturers such as ASUS and MSI, who are usually the first adopters of new standards and often lead the way for others. These systems will be off the back of the chipset companies such as Intel who will probably already be prepared to go to the presses around this time too, with their USB 3.0 technologies.

Following on from that stage are the peripheral manufacturers, these will be the next ones to utilise this new standard to the fullest by capitalising on the speed USB 3.0 will operate.

It's been reported that Apple will be testing the specification during this summer, with rumours that Microsoft Windows 7 will also be addressing 3.0 straight from the box.

Seagate aired a prototype, at Las Vegas'

<http://www.pocket-lint.com/news/23017/pocket-lint-quick-guide-usb-30>

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Consumer Electronic Show (CES) in January, from the series of their best selling external hard disc drives, known as FreeAgent. This was running from USB 3.0, with the company Symwave's SuperSpeed USB prototype controller. Along this offered an example of exactly where the new technology will be placed and how it could be first implemented, whilst at the very same time highlighting who could be first to market with their drives.